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PSYCHANALYSIS AND THE PRACTICE OF MEDICINE

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The most difficult concept to grasp is that our psyche bears within itself the records of its hundreds of thousands of years of evolution and development just as does our body. Just as the body has remnants of a tail and gill slits which bear silent testimony to the path along which it has traveled to reach its present estate, so does the psyche bear similar evidences of its origin; and just as the body in its development has brought into its present structure only these vague reminders of its past, but is what it is today only because of that past, so the psyche, while it, too, contains vague reminders of what has been, is what it is only because of its past, a past on which the present has been constructed. This past, the historical past of our psyche, is always growing, for as soon as the material of the present has been used as material in our growth, as soon as it takes its place in the path of our development by being used as a resting place for further superstructures, then it enters into our historical past. This is the unconscious.

THE UNCONSCIOUS

As man has developed he has had progressively to give up more and more of his primitive, instinctive tendencies as the price for a higher civilization with all of its inestimable benefits. As these instinctive tendencies have been overcome, they have been relegated to the unconscious; and out of the successes attained in the overcoming have been forged the weapons with which to win a new victory. That these cravings simply have been overcome and buried in the unconscious does not mean they have ceased to exist or that they have ceased to be able to influence the individual. Like long forgotten events which a chance association brings flashing into the memory, they may be stirred to activity at any time; or, forgotten and apparently nonexistent, they may nevertheless exercise a continuous but subtle effect on the conscious activities. The poet Grillparzer ceased to be able to write poetry at 28 following the suicide of his mother. He was in the midst of his composition of the "Golden Fleece." He picked up the thread of his lost art again, however, on the occasion of playing Mozart's Symphony in G minor with a mother substitute, a woman who reawakened his mother associations. This was the last piece he had played four-handed with his mother before her death,[1] and so served to give him access again to those sources of energy which had been cut off by her death.

In the unconscious, then, we find the instinct motive for conduct, which is the motive of the familiar, the usual reaction (habit), the easiest way, in short, the pleasure motive. At the level of clear consciousness, reason and judgment hold sway; here the motive is the reality motive, a clear-cut, conscious, intelligent relating of the individual to the facts of existence, which involves, among other things, impressing of instinct in the service of reality and therefore effort, work. Psychanalysis is essentially a study, by a special technic, of the unconscious for the purpose of learning the part the instinctive motives play in the life of the patient. In the words of Freud:[2]

> Psychoanalysis originated on a medical basis as a method of treatment for certain nervous maladies which are called functional and in which there is recognized with constantly increasing certainty the result of disturbances of the affectivity. It attains its object of removing the expressions of such disturbances, the symptoms, by presupposing that *these symptoms may not be the only possible and final outcome of certain mental processes*,[3] and with that in view, exposes the history of the development of the symptoms in the memory, reawakens the processes lying underneath these symptoms, and affords them a more favorable outlet under the guidance of the physician. . . . For, today, we know that the pathological symptoms are often nothing else than substitute formations for bad, i. e., unsuitable, tendencies, and that the conditions of the symptoms are established in the years of childhood and adolescence—at the same time in which the individual is the object of education—whether the maladies actually appear in youth or only in a later period of life.
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> Education and therapy now appear in a reciprocal relation to each other. Education will take care that from certain dispositions and tendencies of the child, nothing harmful to the individual or society shall proceed. Therapy will come into play if these same dispositions have already caused the unwished-for result of a pathological symptom.

Here is the key to the situation. An analysis is for the purpose of reconstructing the psychologic history of the patient so far as that history bears on the formation of the symptoms. As soon as we do this we invariably find the symptoms represent, symbolize, a form of instinctive activity which belongs to the period of infancy and should have been renounced as the child grew to adulthood, but which, because of some special emphasis it then received, has been retained. Common examples are the difficulty with which some children give up the bottle, and adults the habit of nail biting which has been carried over from infancy.

In both of these examples it is quite evident that the activities give pleasure and also that they should be renounced. In other words, they are infantile. They

1. Pfister, Oscar: The Psychoanalytic Method, translated by C. R. Payne, New York, Moffat, Yard & Co., 1917, p. 120.

2. Pfister: The Psychoanalytic Method, p. V.

3. Italics mine.

are both interesting, too, as belonging, the first to a real, the second to a symbolic nutritive or self preservative activity, as opposed to a plainly sexual or race preservative form of activity, these being the two forms of expression into which all others are ultimately reduced. The implication is that a given individual may retain evidences of his infancy only in certain zones of his conduct, his gastro-intestinal, mouth, ear, eye, skin, genital or other zone. These are the so-called partial trends. If the tendencies of the individual as a whole, that is, all of his energies, are called by a single name, we may use the term "libido." Then these partial manifestations would be called partial libido trends.

THE LIBIDO

An analysis of the patient will disclose, then, that one or more of the libido areas has remained at its infantile level of development, has retained its infantile ways of instinctive reaction, of pleasure seeking, has refused to grow up or, to sum it all up, has failed to socialize its libido. That is, it has failed to use some of its energies to the larger ends. Let me give an example of such infantile and asocial ways of using, let us say, the ear libido. From the standpoint of the usual social evaluation, the type of person who is always listening to hear scandal of his associates is despicable. He does not listen to hear something good but always to hear something bad, and the worse the better. This is a somewhat less obvious pleasure-seeking device than that of the person who is all attention at the telling of every obscene story; but the principle is the same because it is the obscene for which he is really listening. Such a person is a pedler of gossip, a besmircher of reputations, and in all sorts of ways, at the level of ear libido (listening) an asocial, destructive member of the community and incidentally a very unhappy and unfulfilled person himself. As far as his function of hearing is concerned, he has not grown up. He is still using his ear to minister to a low level type of curiosity. His ear has not been adequately integrated as a part of a socially useful member of society, and therefore is not used to further socially useful, constructive ends. It remains at the instinctive, pleasure seeking level. How much better he could use his proclivity to listen by going to lectures, readings or concerts and thus socializing his trend by using it for bringing him into contact with his fellows at socially useful levels.

PSYCHOGENIC DISORDERS

Before discussing such character traits as this, though, let me read a list of psychogenic disorders culled from recent writers who were practitioners in various specialties, not psychanalysts, for the purpose of emphasizing the interest in the psychogenesis of apparently physical disorders which has recently arisen, and also because many or most of these ailments would be apt at least to be treated by other than psychologic methods. This list includes many forms of asthma, sore throat, difficult nasal breathing, stammering, headache, neurasthenia, backache, tender spine, "weak heart," fainting attacks, exophthalmic goiter, aphonia, spasmodic sneezing, hiccup, rapid respiration, hay-fever, gastro-intestinal disturbance (constipation, diarrhea, indigestion, colitis, gastric ulcer), ptosis of kidney, diabetes, disturbances of urination (polyuria, incontinence, precipitance), menstrual disorders, autointoxication (from long continued digestive disturbances), nutritional disorders of skin, teeth and hair, etc. The list might be indefinitely prolonged. Let me only briefly add examples of apparently physical disorder for purposes of illustration.

Of the vasomotor disorders I cite the case[4] of a girl, aged 15, who, during analysis, exhibited swollen lips. This had occurred once five years before when a student had tried to kiss her but she had successfully resisted him. A similar attempt had been made before the later recrudescence of the symptom.

An example of a skin eruption is the case of a young woman[5] who had areas of erythema on both forearms. These areas did not tan on exposure to the sun as did the rest of the skin. Analysis showed that the erythematous areas were the places which had been grasped by the mother-in-law in an emotional scene between them. The erythema disappeared following the analysis, and the skin in that area then tanned on exposure.

Certain cases show well that disturbances of menstruation, dysmenorrhea and suppression may be purely psychogenic, due often to a timid, prudish, neurotic mother who scares her daughter to death over the onset of the new function, or leaves her in ignorance to conjure up her own fears on its appearance. Subsequent local treatments, curettage, ventral suspension, etc., not only may not help but may even aggravate the anxiety and make the patient decidedly worse, because, of course, they do not go to the root of the trouble but deal only with results.

I have cited these examples for the purpose of showing that psychogenic disorders are by no means confined to such types as the familiar hysterical aphonias and hysterical palsies, with which all are perfectly familiar and which are easy to recognize. On the contrary, they frequently produce disorders much more subtle in their manifestations, and, what is more, may involve not only deep seated character defects but also metabolic disturbances in which we are not accustomed to look for signs of psychic causation, for example, visceroptoses caused by psychic disturbances, depressing emotions, acting by way of the vegetative nervous system.

Even, however, in instances of such evident hysterical reactions, the mere dealing with the symptom and causing it to disappear is inadequate treatment, for it does not touch the underlying trouble; it leaves the character defect as it was, only, as a rule, to manufacture new symptoms. A boy of 17 had for some days a strange feeling in his left arm. This feeling was contemporaneous with the desire of his father to take him from his present school and send him to another. The boy did not want to go. Analysis revealed the fact that when as a child he was about to be vaccinated he struggled so violently that he succeeded in avoiding the disagreeable experience. This experience was entirely unknown to the patient until brought out by analysis.[6] The interpretation becomes easy if we will use the formula for such cases. The symptoms mean a wish that things might be "as they were then" on that other occasion when they tried to vaccinate him. That is, he wishes that he may succeed, by his obstinacy, in thwarting the desires of his father as he succeeded before. The treatment of such a condition by causing the disagreeable sensation in the arm to disappear by suggestion on the theory that that is the disease can at once be seen to be entirely inadequate to the situation. It leaves untouched the char-

4. Pfister: The Psychoanalytic Method, p. 32.
5. Personal communication to the author by Dr. E. J. Kempf.
6. Pfister: The Psychoanalytic Method, p. 44.

acter defect, which is to react by obstinacy to disagreeable situations. In this respect the boy is retaining an infantile way of dealing with things he does not like, and needs to be helped to grow up, to develop on this side of his character. Unless the treatment is directed to such ends, it misses its goal.

PRACTICAL PSYCHOLOGY

The difficulty has been, in the past, that psychology has never employed itself with such questions. Entrenched in its laboratories it has carried on its work far removed from the every-day life of "the man in the street." But now that is exactly what psychanalysis is demanding of it. Why John Smith does not get along with his wife has always been a matter of absorbing interest to the neighborhood, but psychology has never dignified such a problem with its attention. It is through just such facts, however, it is because we do not get along with our wives, because we are not interested in our work, because we are not appreciated by our chief, or are imposed on by our associates, because we get too tired, sleep too little or drink too much, because our salary is too small, or we cannot save, or the other fellow who does not do as good work as we do gets more, or a thousand other reasons, none of which for a moment cause the sufferer to seek the advice of a physician, that we are finally coming to see what makes the difference between a happy life, filled with usefulness, and failure. Of such problems from the point of view of the educator, Pfister[7] says:

> Of the analytic educational work with pupils, who, without being really ill, still, because of inner inhibitions, make themselves and their families unhappy, there is almost no mention anywhere. How the hitherto unobserved impressions of childhood control the whole later development of the normal individual, even to the peculiarity of his style, his choice of a vocation and of a wife, as well as the most insignificant subordinate affairs, finds too little discussion. The enormous loss of love for fellowmen and of power for work which many individuals suffer, mostly without knowing it, as a result of unfavorable educational influences, have not, up to the present time, been given their proper weight in the literature. . . . Countless numbers of persons who bring heart-breaking grief to their parents and other people and cannot help bringing it because they are under neurotic obsessions can by the aid of analysis be changed into agreeable useful individuals.

Unless psychology is willing to busy itself with such problems, it may well be called on to justify its existence.

Psychanalysis is essentially an educational procedure. Its object is to clear away the rubbish which is obstructing the pathway of the patient so that he may have a chance to go forward. This is precisely what education tries to do. Most emphatically neither should try to impose ideas on others; they should simply make the way free to permit the fullest development of the personality.

HEREDITY

It is, of course, the fashion in some quarters to emphasize heredity as the responsible agent for all childhood anomalies and deviations from later normal development. This is surely the easier way. The cry of the eugenists for sterilization laws reminds me of the Queen of Hearts in "Alice's Adventures in Wonderland" with her "Off with their heads"—a simple solution and seductive, but like all such things, too easy. We find that we must really come back to a constructive program that involves work, the expenditure of effort, if anything of value is to be accomplished.

The psychanalysts believe there are shorter cuts to the neuroses than by way of heredity. Here are a couple of remarks by parents which recently came to my attention: One mother says that a child has no morals until after 9 years of age. Before that they are just little animals and so of course there is nothing to do about it—a fine formula to relieve the parent from all responsibility and sanction a program of do-nothingness. Another parent believes in teaching children absolute obedience—a fine thing for the parent surely, but what of the child? How can one expect a child in either one of these households to develop? How is it going to be possible to get any chance at all? As a result must it not almost surely happen that, thwarted in its natural avenues of expression, it will seek the by-ways? That is the stuff out of which the neuroses and future inefficiency and unhappiness are built.

I cannot refrain from mentioning a recent experience. A woman of splendid qualities but with certain childish reactions of a difficult, surly, inaccessible type, which were wrecking her happiness, had all sorts of difficulties with her little boy. She and he were in constant conflict. One day, toward the end of the analysis, she came to me with this incident: She was busy with some photographs when the little boy came in the room. He at once started to make things rather lively, whereupon she said, "Now my dear, if you will be quiet you may stay with mother." This was an altogether new reaction on the part of his mother, and so he responded by saying, "Really, mother, may I stay?" She answered in the affirmative, and he proceeded to compose himself and became interested in the pictures; but before finally sitting down, by way of reassurance, looked up and said, "Really, mother, do you mean it, may I stay?" A response of love had been met in kind, and when the analysis was completed, she and her little boy were rapidly getting on a basis of real friendship and comradeship.

These illustrations show clearly that it is often not the apparently sick person who needs the attention. As in the case of these children, for example, it is often of much more importance to straighten out the mother; without that it might well be impossible to help the child materially. The lesson from such cases is that the field of medicine is broadening tremendously. We are on the verge of admitting all sorts of problems which a generation ago we did not even know existed. The problem of psychanalysis in such instances as these has to do not only with the individual who may come or be brought to the consultation room, but also with the whole family and their social setting. Its breadth of application is sufficiently evident without further elaboration.

From the cases thus far adduced it will be evident that the theory which accounts for the later neurosis assumes that the trouble began in the early years of childhood, not as the result of some concrete sexual trauma, as many people still think, but as the natural consequence of a fixation of certain areas of the child's interest, so that in this particular respect he does not grow up. The cause of this fixation, which, for our present purposes, we may call detention of the libido or interest on the road of development, is that the child's interest is too strongly attracted because of the undue pleasure premium which this particular area

7. Pfister: The Psychoanalytic Method, p. 14.

of interest offers. In the case of the asocial ways of using the ear libido already mentioned, for instance, it would probably be found that the child was early attracted to listening ways of pleasure seeking because of having heard or been told about forbidden sexual matters which he found absorbingly interesting. Only by finding such things in the history can the later development be understood. That the matter was sexual is ventured only because that is what would be expected from experience. That all pleasure founds in the last analysis in sex pleasure is a hypothesis forced on the analyst by his daily experience; it is not an arbitrary hypothesis into which he tries to make every fact fit. The hypothesis that all pleasure, in its ultimate analysis, is reducible to that quality of emotion which is associated with the most important act in the life of the individual, from the point of view of the welfare of the race, is not a whit more surprising or more radical than the generalization that all of the attributes of life are traceable to the single property of protoplasm—irritability. After all, it is of less practical importance to answer the question "Whence?" than to answer the question "Whither?" It is only a matter of detail how we reply to the query "Whence?" for in any case we have all traveled the same evolutional pathway. To the individual, however, it is of the greatest importance that he should be able to make the best use of his opportunities, that he should be able to answer the question "Whither?" in a satisfactory way. But there is another aspect of the matter which I think of especial importance.

All along the biologic pathway progress has been possible only because each unit, besides preserving its own integrity, has been willing, so to speak, to give something to the larger unit of which it formed a part. Each cell, besides preserving its own life, must give up part of its activities to help in the activities of the organ of which it is a part; the organ must do likewise with respect to the larger unit, the individual, and the individual must repeat the process as a member of society—the herd. The liver, for example, besides preserving itself as liver, stores up glycogen to be used by the muscles when the individual is in danger, and gives of this store for the larger whole; the man pays his taxes and similarly helps the problem of society, of which he is an integral part. It thus comes about that in the process of the successive integrations to progressively larger ends, what we call personality or character issues as an end-result, depending, however, on all those bodily processes which underly it. Therefore, according to Adler, character traits ultimately are reducible to terms of organic structure, and so defects of character depend on organ inferiority.

ADLER'S CONCEPTS

The adlerian concept would substitute for the freudian theory of "libido fixation" as an explanation for a given defect of character the theory of an inferior organ. He believes that an inferior organ gives a sense of insecurity, inferiority, against which the neurotic tries to protect himself by so ordering his life, so regulating his every act, that he may find that security of which the feeling of inferiority has robbed him. This effort to find security is the fictitious goal of the neurotic who fails in attaining the maximation of his ego because his efforts are directed along this false path. He is not free to deal with reality at his best, but must always subordinate the demands of reality to the inner need of satisfying his craving for security. The neurosis or psychosis is therefore a constructive creation, a compromise, a compensation product, which, however, fails because of its false direction. His theory, summed up in a few words, reads: The neurotic constitution founds in an inferior organ; the inferior organ produces a feeling of inferiority; the feeling of inferiority creates the fictitious goal of the neurotic, whose symptoms result from an effort to mold reality along the false pathway that leads to safety.

From this point of view our asocial listener would receive a somewhat different interpretation than we have thus far given, namely, it would be expected that an examination of his ears would show that they were in some way inferior organs. In confirmation of this I may say that in an examination of a number of sense organs in hallucinated patients I never found one that could be considered normal.[8] Let me add as serving to bring the adlerian and the freudian theories together that Adler asserts that wherever such organ inferiority can be demonstrated he has never failed to find also an inferiority of the sex organs.

To come back to our listener: Not only should we expect him to show inferiority of the organ of hearing, but also we should expect him to feel a sense of inferiority which would manifest itself in the zone of ear libido. We might expect him to feel frightened, for example, if he was unable to hear what people were saying and consequently to feel that they might have been saying something about him, something not pleasant, of course, hatching up a plot to injure him, or the like. The picture is familiar enough, and at the pathologic level gives us at once the suggestion of the paranoiac with his hallucinations of hearing and his delusions of persecution.

The inferior organ, in this case the organ of hearing, can therefore be seen to be asocial in its tendencies because it hangs on to infantile ways of pleasure-seeking which should be abandoned as the individual grows to adulthood in favor of activities that minister more to the larger good. The individual, after all, can include only what is under central control, the dynamic or metabolic gradient, Child calls it,[9] speaking of the physiologic individual. A group of cells may establish their own independent gradient and so break off from the main body and set up a government for themselves. This we recognize as one of the determiners of tumor formation. A similar independence at the psychologic level makes the individual, in the particular region involved, asocial. Asocial conduct may therefore found in organ inferiority.

Adler's theories are helpful in orienting the physician toward the larger problems which the patient presents, whether he approaches it from the point of view of the internist or that of the psychologist. His theories are admirably calculated to help the internist to grasp the possibilities of organ inferiority as they may affect the psyche and to help the psychanalyst to grasp the origin and meanings of the neurosis as he sees it at the psychologic level, and perhaps to see more clearly on what his limitations are based. In any event the two groups of physicians, heretofore separated all too far, both in theory and practice, may find in Adler's views a common ground on which to meet.

8. White, W. A.: Hallucinations, Proc. Am. Med. Psychol. Assn., May, 1904.
9. Child, C. M.: The Basis of Physiological Individuality in Organism, Science, April 14, 1916.

SOME APPLICATIONS

I have used illustrations which I have picked with care because I thought them simple and easily understandable. I might add a great many more of mistaken diagnosis, surgical procedures for mental states, etc. For example, we have a boy in the hospital now on whom a partial thyroidectomy was done for a hysterical globus, and I need only mention the delirium of ovariectomies less than a generation ago, a delirium which bids fair to be replaced today by a delirium of colectomies. All are familiar with such instances. Perhaps it is not appreciated, however, how insistent many patients are for operation, how they will argue most ingeniously for it, and seek surgeon after surgeon until one complies. Such patients are a positive menace, especially to the young surgeon who would like to operate anyway. The desire for operation may probably have many causes. I have in mind the case of a young man with a hysterical paralysis of the left leg.[5] The leg in its paralyzed state was only a nuisance, and he wanted it amputated. Analysis showed the paralyzed leg to be a masturbation symbol. He wished to get rid of his masturbation by a species of sacrifice and penance. The paralysis disappeared as the result of a single psychanalytic talk. I recently saw a woman who had had three laparotomies, all more or less exploratory in character, because of pain, and so far as I could determine none of them showed any condition surgically removable. It was plain from my talk with her that the operations were engineered in order to maintain a childlike relation of dependence on the surgeon, of whom she was very fond.

The practice of medicine can no longer neglect the psyche; it must take into consideration the larger issues. A too refined medical specialism concentrates its attention on the particular organ and so is often blind to the meaning of the symptoms as they refer to the whole individual. The old medical specialism considered the organ out of its setting in the rest of the economy; the new specialism must consider the organ in its setting, and in this new specialism the psyche will have a considerable place.

Every once in a while one sees an ordinary illness, more especially some disease of the respiratory organs, "cold," bronchitis or pneumonia, which investigation will indicate was intentionally acquired. Such illnesses are pretty apt to show on analysis that they are suicidal attempts. Such cases suggest that, when one finds a patient suffering from a disease due to exposure and the history shows a degree of carelessness out of all proportion to the patient's usual habits, it would be worth while to look deeper for motives. I am also reminded that some surgical injuries, such as broken bones from falls and the like, may have a similar origin, either as an attempt at suicide or a form of penance. Time does not permit me to elaborate this motive. I can only say that it is universal. A good illustration of its present day forms is seen in the "conscience fund" of the United States Treasury to which annually thousands of dollars are anonymously contributed. I need not speak of the importance of these facts when taken into consideration in connection with workmen's liability acts, accident insurance, sick benefit claims, health insurance, etc.

TECHNIC OF PSYCHANALYSIS

To acquire even a reasonable degree of proficiency in the technic of psychanalysis, as in any other department of medicine, requires careful study and much thought. There is no royal road. Work is the password. But if I counsel work it is not to avoid the issue and have psychanalysis shrouded in mysticism. The analytic results, often, perhaps usually, seem strange, sometimes grotesque. This is perhaps true of the last instances I cited, especially the young man with the paralyzed leg, and the examples of intentional surgical injuries. This is only because they are not formulated in familiar symbols. I have no doubt that many a medical student at his first clinic has looked on the lecturer, who could put his ear to the patient's chest for a minute and then talk for an hour on what he heard, as little else than a wizard, and has felt himself so incapable of ever being able to do likewise that he then and there has felt that after all he was afraid he could never be a doctor. Devote as much time and attention to psychanalysis as this medical student had to devote to the study of percussion and auscultation and pathology and one will find oneself on quite as familiar ground.

If one wishes to enter the field of analysis, the first requisite is to be able to listen to what the patient says. It requires infinite patience and must be fortified by the conviction that everything psychic has a meaning just as truly as does everything physical. A physician would not let a patient sidetrack him from a physical symptom or explain it away. Similarly on the mental side. There must be a reason for everything, although the patient, often with great ingenuity, will slight over the important, emphasize the unimportant, and in every way unconsciously try to mislead. Naturally it requires some experience to deal with such behavior. The way to get the experience is to try it. No adequate attitude toward psychanalysis can be reached by reading alone; it is absolutely necessary to come into intimate personal contact with the problems in an actual, living patient. Before trying it, however, one should take a sufficient course of reading so as to have some idea of what one is trying to do. One will not have to try long before beginning to get a glimpse of what is going on behind the scenes, but it will be some time before one can cope with any real difficulties. As soon as one begins consciously to try to learn something of a patient's psyche, it is surprising how much information can be obtained which will be of value.

Even if one is not disposed to do analytic work, let me suggest that, as psychanalysis is met in the literature from time to time, one's attitude toward it should be that of Leibnitz toward a new book. He said:

> It is characteristic of me to hold opposition as of little account, exposition as of much account, and when a new book comes into my hands I look for what I can learn from it, not for what I can criticize in it.

SEXUALITY IN PSYCHANALYSIS

The reader may be wondering by this time why I have said almost nothing about sexuality. It is because I have not wanted to overemphasize it in presenting what I believed to be large, fundamental considerations. It certainly is not because I in any way minimize its importance, for I do not. Whether or not all pleasure founds in sex, as I have suggested, is a matter of hypothesis. At any rate the problem will be encountered among patients, and must be dealt with and not run away from. With regard to this matter I can do no better than quote Pastor Pfister of Zurich, who says:

Psychoanalysis is not only compatible with the highest ethical and religious demands but absolutely presupposes them. . . . The analysis has strengthened me in the conviction that the human being is in no way merely a sexual being of the highest order (which no psychoanalyst has ever asserted) but that the varied mental wealth and noble characteristics which the idealistic philosophy has found in him really belong to him. To be sure, I could not avoid the insight that the sexual life possesses a far higher significance in our mental household than the traditional psychology . . . is willing to admit.

It is objected that the psychanalytic procedure takes so much time that it is unpractical. This complaint comes from the physicians, not from the patients. Perhaps it does take a long time and perhaps some way may be found to shorten it; but in the meantime we must make the best of it, and after all that is no argument against the validity of the positions set forth. For my part I doubt very much if the time can be materially shortened; the problem is too difficult, it means overcoming prejudice, instinct. To make the patients see themselves with intelligence is of necessity a long and tedious task, but no longer than the task of dealing with tuberculosis, although I grant it does demand more time of the physician. But after all, what we are trying to do is to rebuild a personality. It is a problem in character reformation; and if we succeed in making a person over from a useless invalid into a useful citizen, who shall say that the time was not well spent? Remember, we must "give to the diamond its ages to grow."

EPIDEMIC ULCEROMEMBRANOUS STOMATITIS (VINCENT'S ANGINA) AFFECTING TROOPS

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During the four months, October, 1916, to February, 1917, 129 cases of this hitherto rare condition have passed through our hands. In this article we endeavor to give the results of our routine, laboratory and ward observations, which though incomplete may be of value in Canada and the United States after the conclusion of the present conflict, whither doubtless the infection will be carried by the returning troops.

Until the beginning of the war, it was in Europe one of the rarest diseases, and in America practically unknown, at least so far as medical literature was concerned. It seems to have first become prevalent in France, where it was known as trench mouth, and believed to be caused by overindulgence in cigarets, etc. Now, however, it is so prevalent that it may be classed as among the commonest of disabilities among the troops. As usually seen the condition is not such as to confine the patient to bed, but the accompanying depression and the inability to masticate properly causes a serious lowering in efficiency.

Vincent's angina is an infectious disease of the mucous membrane of the mouth, throat, bronchi and prepuce. By far the most frequent site of infection is in the mouth and throat. Next in frequency are the bronchial cases. The preputial cases are rare.

VINCENT'S ANGINA OF THE MOUTH AND THROAT

Type 1.—The largest percentage of cases are of tonsillar type. Here the patient on being admitted usually is found to have a yellowish-gray membrane covering one or both tonsils. The breath is extremely fetid, the odor differing markedly from that of diphtheria. The patient complains of some difficulty in swallowing and of enlarged and tender cervical lymph glands. But absence of headache, myalgia and marked prostration is characteristic of angina as contrasted with diphtheria or acute tonsillitis. The temperature is slightly elevated, although in some cases it may be as high as 103.5 F. The pulse and respiration are but slightly elevated.

In the early cases there are only small whitish patches situated in the crypts. If the trouble is not treated these patches may spread until the membrane covers the whole tonsil; they may extend over the soft palate, uvula, and even the posterior wall of the pharynx. In a well developed case the membrane is yellowish gray, resembling a diphtheria membrane so closely that a differential diagnosis can be made only by a microscope. In the early stages it is the superficial destruction of the epithelium.

On being removed, it leaves a freely bleeding surface, as in diphtheria. In more advanced stages there is an ulceration of the deeper structures so that the tonsil may almost be entirely eaten away. In two of our cases the membrane had formed a pocket in the tonsil, eating away the glandular tissues to such an extent that only the supporting tissues and capsule remained.

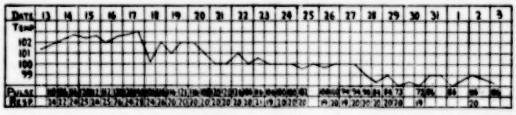
Type 2.—The next most frequent type is a deep ulcer on the ramus of the lower jaw, immediately behind the last molar tooth. In many cases the posterior edge of the ulcer is swollen so that it projects over the crown of the tooth, making mastication practically impossible. In untreated cases, infection spreads along the margin of the gums, causing pyorrhea about the molar teeth.

Type 3.—Pyorrhea caused by Vincent's organisms is also frequent. Usually in an otherwise healthy mouth, it is at first limited to the region of the upper and lower incisors. The gums are swollen, spongy and tender, and bleed easily. On pressure there is usually a copious flow of pus mixed with blood, the alveolar surface of the gum being eroded and covered with a yellowish membrane. In advanced cases the teeth become loose and may even drop out. Any condition, as mercurial treatment, tending to lower the vitality of the gums predisposes to a speedy infection with Vincent's organisms. A number of our severest cases followed inunction of mercurial ointment for the removal of pediculi. A number of advanced cases were found in men who were undergoing antisyphilitic treatment with mercury, the lesions being taken for mercurial gingivitis or syphilitic lesions. These cases cleared up quickly under arsenic. Decayed teeth or any mechanical injuries to the gums frequently form a nidus for infection. The frequency of pyorrhea about the incisors is in our opinion due to injury of the gums in biting.

Type 4.—General infection of the mouth is the severest type of all, and the patient is acutely ill. The membrane extends over the cheeks, tongue, fauces, pharynx and palate, and even to the lips. Ulcerations occur on the cheeks where they are in contact with the teeth. The tongue is greatly swollen, making speaking and swallowing difficult, and the margin is deeply

indented with ulcers corresponding to each tooth. The infection may extend along the ducts into the parotid and submaxillary glands, sometimes causing chronic enlargement of them. A description of a recent case may be of interest:

L., admitted to the hospital, Jan. 13, 1917, with membrane covering both tonsils and extending on the uvula, was feeling acutely ill. The temperature was 100.4 F., the pulse 110, and respirations 24. He said his throat got sore two days before. Microscopic examination of a smear from the membrane revealed an almost pure culture of the fusiform bacillus with a few spirochetes and cocci. By the following day the membrane had extended over the entire mouth and tongue and to the lips. January 17, the patient developed a peculiar rash, mostly on the extremities, both the palmar and dorsal surfaces being affected. The spots, about a dozen on each forearm and leg, were about one-quarter inch in diameter, sharply raised, copper colored, and the center of each contained a small oblong vesicle. His temperature went up to 103 F., pulse 140, respiration 28. He was immediately put on intensive arsenical treatment, with salicylates. As the accompanying chart shows, a speedy improvement in his condition followed. A Wassermann test performed at this time was negative. The vesicles dried and the elevations had almost disappeared at the end of a week, leaving copper colored marks in the skin, which are gradually fading. With the fall in temperature the mouth condition began to improve, the swelling decreased, and the ulcers began to heal, the membranes becoming, as is usual, thin, semiopaque and bluish white, in appearance almost identical with the mucous patches of syphilis. January 28, swabs taken from these patches failed to show the presence of any Vincent's organisms. This case was quite exceptional in its severity.



Temperature, pulse and respiration chart in a case of Vincent's angina in which there was general infection of the mouth.

BRONCHIAL INFECTION

Seven cases have come under our notice in which the clinical picture was a moderately severe bronchitis, with copious expectoration, general depression, and very slight but definite elevation of temperature. These cases ran a course of about three weeks. The sputum in all was loaded with Vincent's organisms, these being the principal organisms present. There were no visible lesions in the mouth or throat. As yet none of these patients have returned to the hospital, and as some of them were treated merely with a simple expectorant mixture, the infection in this situation must be considered to be self limiting with a course of about three weeks. The manner in which the organisms disappeared from the sputum is described further on.

BALANITIS

Four cases were seen in men with long prepuces. There was considerable edema of the foreskin, the inner surface of which was covered with the typical membranous ulcers, some of which had spread to the glans. Infection was due to the lack of cleanliness and to chafing. All cleared up in four or five days under treatment.

BACTERIOLOGY

In about 50 per cent. of all swabs taken from the throats of troops here, a few Vincent's organisms are found. The large number of cases of Vincent's angina can be understood when the effect of injury or lowering of vitality of the tissues is taken into account. In lesions the two organisms, namely, the fusiform bacillus and the spirochete, are invariably present at the same time. In early cases the bacilli are practically always much more numerous than the spirochetes, but in more advanced cases the spirochetes are usually the predominant organisms. Various forms of staphylococci and diplococci are always present, and in long standing cases of pyorrhea, the *Bacillus ramosus* and the *Endamoeba buccalis* are frequently found. Carbolgentian violet is the most satisfactory stain for use in looking for these organisms, the bacilli taking the stain readily and the spirochetes fairly well. Both organisms are usually gram negative.

Various forms of the bacilli are seen: (*a*) large, with from two to four pale bands traversing them; (*b*) smaller, with one pale band in the center, giving the appearance almost of very long diplococci and (*c*) small, and evenly stained throughout. In old cases spirochetes are frequently seen to contain granules.

In mouth and throat lesions undergoing active treatment, the organisms disappear in a few days. But several of our bronchial cases gave opportunity for more lengthy observation. When first examined the sputum contained about equal numbers of the organisms. After about a week the spirochetes were much more numerous and had become granular, from four to eight darkly stained granules being distributed throughout the length of each. At the end of another week or ten days the organisms were greatly diminished in number, being practically all spirochetes. Many of them were swollen and straightened, looking like a sausage with the tip at one end cut off. Some were empty; others were seen with the granules dropping from the open end. Shortly after this the patients were discharged from the hospital as cured. We have observed the same changes in the organisms when grown anaerobically in ascitic broth containing a piece of tissue. If the cloudy growth be examined after three or four weeks it is found to consist of a few living spirochetes, very numerous granules, and numerous empty shells of spirochetes.

The incubation period of the disease is as yet unknown. We have seen two cases in men who on landing here from Canada, three weeks before, had perfectly healthy mouths.

DIFFERENTIAL DIAGNOSIS

From diphtheria the tonsillar type of Vincent's angina can be distinguished with accuracy only by a microscopic examination of a smear, as the membranes would otherwise be identical in characteristics, namely, location, color, toughness and the fact that when removed they have a freely bleeding surface. However, the patient with Vincent's angina is never so acutely ill as a diphtheritic with the same amount of membrane. He has as a rule no headache, sore back or great depression, his complaints being a sore throat which has come on one or two days previously, difficulty in swallowing, and enlarged and tender cervical glands. In a few of our cases the two infections were found together, these patients on admission being quite ill. This combination is rare. Patients, how-

ever, with a Vincent's angina, when in contact with a Klebs-Loeffler bacillus carrier, readily become infected.

Microscopic examination is of still greater importance when the patient gives a syphilitic history, especially when he is undergoing mercurial treatment, for this undoubtedly favors the development of Vincent's angina. As stated elsewhere, many of our severest cases were found in syphilitics undergoing intensive mercurial treatment, the lesions being completely cured in a few days by the application of an arsenical solution. The presence of a positive Wassermann reaction does not exclude Vincent's angina, nor does the fact that a mouth lesion clears up quickly under arsenic exclude syphilis. In cases of Vincent's angina with no syphilitic history, however, the Wassermann reaction is always negative. A healing ulcer about the mouth or throat will almost invariably be mistaken for a syphilitic mucous patch by any one who is unacquainted with the case.

In pyorrhea the onset is often given as from two to three days before admission, and in such cases is usually limited to the upper and lower incisors. When the condition is general, the history is usually given of a long standing pyorrhea, and the *Endamoeba buccalis* is frequently found along with Vincent's organisms. In bronchitis and balanitis, the diagnosis can be made only by microscopic examination of a smear.

TREATMENT

Many forms of treatment have been recommended, including the use of arsenic, iodin, silver nitrate, trichloracetic acid, hydrogen peroxid, tincture of ferric chlorid, and potassium permanganate. In slight lesions any of these will bring about a cure. Arsenic, however, is undoubtedly the most useful remedy, especially in the form of salvarsan or neosalvarsan. As these drugs are expensive and difficult to use, their employment is infrequent. For ulcerations about the mouth and tonsils, our routine treatment is liquor arsenicalis (liquor potassii arsenitis) swabbed on three or four times a day. Where the ulcer is deep and spreading rapidly it is first well swabbed with 10 per cent. silver nitrate solution, and the treatment continued with liquor arsenicalis.

In pyorrhea we employ the mixture recommended by Bowman:[1] vinum ipecacuanhae, ½ ounce; glycerinum, 1 dram; liquor arsenicalis, sufficient to make 1 ounce. A few drops are poured on the patient's toothbrush and the gums are well brushed two or three times a day. It is surprising how quickly the lesions will disappear under this treatment, a severe acute pyorrhea being completely cured in five or six days. In general stomatitis and gingivitis the patient should be given large doses of liquor arsenicalis internally, sodium cacodylate hypodermically, or salvarsan. He also should frequently use a soothing antiseptic mouth wash until the condition is sufficiently under control to permit of local treatment. The great majority of cases are cured in from four to seven days. We have had few returns of patients discharged as cured.

1. Bowman: Proc. Roy. Soc. Med., 1915, **9**. For treatment see also Ramond: Progrès méd.

Medicine Must Be a Progressive Art.—The practice of medicine, like the practice of every other profession, must improve in character largely as the result of opposing principles, and our methods of practice, like the methods of any other art, must change to meet the ever-changing conditions of a progressive age.—G. Hudson-Makuen, M.D.

COMPLEMENT FIXATION TESTS IN TUBERCULISIS

A COMPARISON OF THE AUTOLYSATE ANTIGEN AND MILLER'S BACILLARY ANTIGEN *

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AND
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In scanning the literature on complement fixation for tuberculosis, one is astonished at the number of substances used as antigen for this test and the great diversity of results obtained, some authors asserting only a 50 per cent. efficiency for the test, and others that the test even outclasses the Wassermann reaction, with 95 or more per cent. positive reactions in active cases. Some are so bold in their contention as to hold a positive complement fixation test as an indication of the presence or absence of tuberculosis which requires treatment against all other findings.

There seems to be no uniformity in the findings and contentions of any two observers, owing probably to the facts that each observer is working with his own new antigen, and that only a few go far enough into the work to compare a number of different antigens. Elizabeth Fraser[1] stands out preeminently as one of these; her conclusions are conservative, and seem to the trained mind to be well controlled and closely approaching the facts in the case. As a result of examinations made with a number of antigens, she concludes that of all those tried by her, the one which gives the clearest cut specific reaction and is most reliable is an emulsion of living virulent tubercle bacilli.

It is also noteworthy that in the methods of preparation of the various antigens described by various authors, these descriptions are often found wanting in details and are frequently impossible of constant preparation. This is especially true of the egg medium antigen of Besredka[2] and the alcoholic antigen of Craig.[3] Even Bronfenbrenner,[4] who did a great deal of work with the former, states in one of his papers that he had to rely on Besredka for the preparation of the antigen, and that no two preparations were identical. Alcoholic extracts as used in Craig's work have innumerable times been proved unpractical and worthless, and a recent paper by Lucke[5] corroborates these earlier findings.

Recently those of us who have been working on complement fixation were startled by the wonderful results reported by Miller,[6] whose antigen[7] seemed to us to be no more nor less than a bacillary emulsion. Wherein lay the discrepancy in these new findings and those of previous experienced investigators? Fortunately the preparation of Miller's antigen was clearly given so that the comparisons were possible by the same observer using other antigens. The method of preparation is: Twenty milligrams of moist tubercle

* From the Laboratory of the City of Chicago Municipal Tuberculosis Sanitarium.

1. Fraser, Elizabeth: Ztschr. f. Immunitätsforsch., 1913, **20**, 291.
2. Besredka, A.: Compt. rend. Acad. d. sc., 1913, **156**, 1633.
3. Craig, C. F.: Am. Jour. Med. Sc., 1915, **150**, 781.
4. Bronfenbrenner, J.: The Complement-Deviation Test with Besredka's Tuberculin, and the Occurrence of Tuberculosis Among Syphilitics as Diagnosed by This Test, Arch. Int. Med., December, 1914, p. 786. Bronfenbrenner, J., and Rockman, J.: Biochem. Bull., 1914, **3**, 381.
5. Lucke, Baldwin: Jour. Immunol., 1916, **p. 457**.
6. Miller, H. R.: The Clinical Value of Complement Fixation in Tuberculosis, The Journal A. M. A., Nov. 18, 1916, p. 1519.
7. Miller, H. R., and Zinsser, H.: Proc. Soc. Exper. Biol. and Med., 1916, **13**, 134.

bacillus mass is weighed out, placed in a conical 15 c.c. centrifuge tube, and to it are added 90 mg. of table salt. With a glass rod filed to roughness at the end, this paste is ground by hand for about one hour. Distilled water is then added to isotonicity; that is, 10 c.c. to the quantities described above. This is the antigen. Just before it is used it is shaken up, and the heavier particles are allowed to settle in the course of a few minutes. Except for the removal of these larger elements, the suspension is used as a whole without centrifugation and without filtration.

As the result of his work, Miller concludes that the reaction with his antigen is practically always positive in active tuberculosis. Out of 284 pulmonary cases, 275 were positive. Nontuberculous and normal patients react negatively; 144 cases were all negative. The serums of syphilitics who have no clinically active tuberculosis are negative; the test is, as a rule, negative in arrested cases; out of 113 serums only ten were positive.

In previous communications on complement fixation in tuberculosis,[8] an autolysate antigen was described, and the results obtained by means of a monovalent autolysate antigen compared with those obtained with the same monovalent bacillary emulsion. The former had a decided advantage over the latter in giving more clear cut reactions, being more stable and more constant of preparation, giving more permanent reactions, and being practically free from anticomplementary influences, the range of antigenic dose being very wide. The number of positive reactions did not differ greatly from those obtained with the bacillary emulsion, and in percentage efficiency was corroborative of the findings of Fraser, being positive in about 30 to 40 per cent. of all clinically definite cases of tuberculosis, both active and inactive, active cases giving slightly higher percentage results than inactive cases. More recent work, to be reported in full later, also indicates that a polyvalent antigen increases this efficiency only slightly, but by no means to 80 or 90 per cent., and that it is always advisable to do a Wassermann reaction on the same serum with a standard antigen (not cholesterinized or reinforced); if this is positive, no conclusions can be drawn as to the value of a positive tuberculosis test. On the other hand, a positive tuberculosis test in the absence of a positive Wassermann reaction is significant. As far as differentiating activity from inactivity is concerned, this is impossible, even though active cases give slightly higher percentage reactions than inactive cases.

With the foregoing disagreements in results obtained by different observers using practically, as far as specificity of the antigen is concerned, the same substances—in one case the bacillary body and in the other the autolysate therefrom—it seemed highly advisable to compare these two, all operations being carried on by the same worker and with all the cases classified in the same way. It is easy to appreciate that all the differences in percentage findings may be entirely due either to a difference in classification of cases, to faulty clinical records, or to incorrect classification of such records. There is in tuberculosis, when we consider the pathology of the disease, its wide spread, and the inefficiency of present day clinical methods of diagnosis except in advanced cases, a fair chance of making such errors of classification. For instance, how many cases of tuberculosis of the tracheobronchial glands are actually found in the course of the ordinary clinical examinations? This is easily appreciated when comparing Roentgen and clinical findings. For this reason, conclusions as to the value of a test of this type can be drawn only on the basis of a large number of cases of tuberculosis tested, and only conservatively on the basis of results obtained on supposedly normal persons.

Unfortunately, all the patients reported on in this paper were residents in a tuberculosis sanatorium, and therefore the normals may not be so in the strict tuberculosis sense of the word but only so far as clinical findings are concerned. For the same reason the number of clear cut clinical cases of syphilis obtained are few, and in the majority of cases can be considered only as Wassermann positive cases; the latter were not included in tabulating the results.

An ideal antigen to be of practical value in complement fixation must have a definite even though small range between the anticomplementary and antigenic dose, and the reaction must not be too transient. That this is not the case with the Miller bacillary antigen, at least in many instances, is shown in Table 1, in which the antigenic dose and anticomplementary dose

TABLE 1.—TITRATION OF ANTICOMPLEMENTARY AND ANTIGEN STRENGTH (MONOVALENT)*

		Antigen, C.c.								
		0.002	0.003	0.005	0.007	0.01	0.015	0.02	0.03	0.05
1305A	A	—	—	—	±	++	+++	++++	++++	++++
	AC	—	—	—	—	—	—	—	—	—
1305M	A	—	—	±	+	++	++	++	++	++
	AC	—	—	—	—	—	A	AA	AA	AA
1563M	A	—	±	±	+	++	++	+++	+++	+++
	AC	—	—	—	A	AA	AA	AA	AA	AA
2417M	A	—	—	±	±	+	++	++	++	++
	AC	—	—	—	—	—	—	A	AA	AA

* Readings after thirty minutes at 37 C. in the water bath.

of Monovalent Autolysate Antigen 1305, and Miller's antigens 1305, 1563 and 2417 (monovalent), and in Table 2, in which a polyvalent Miller's antigen[9] are titrated. In these tables the amount of antigen used in each test is given in cubic centimeters, and the results, hemolysis (—) or absence of hemolysis (+) is given after A, the antigen test, which was done with a strong (+ + + +) tuberculosis serum, and after A C, the anticomplementary test, which was done with the hemolytic system and antigen alone (the absence of hemolysis is here designated by "A" instead of "+," as above). All readings of results in Tables 1 and 2 were made after thirty minutes in a water bath at 37 C. To obtain titers of Miller's antigens for use in the subsequent tabulated results it was necessary to use a dose as indicated, which would be serviceable by only a fifteen minute incubation at 37 C. In all the titrations and tests the Noguchi antihuman hemolytic system was used. From these titrations it is to be concluded that, when Miller's bacillary antigen is used, the reactions are transient and the results must be read before from twenty to thirty minutes' incubation at 37 C. in a water bath, and even then the range of use of the bacillary antigen is only small. On the

8. Corper, H. J.: Jour. Infec. Dis., 1916, **19**, 315; Bull. Nat. Assn. for Study and Prevention of Tuberculosis, 1916, **12**, 205.

9. This polyvalent Miller's antigen, Parke, Davis & Co. 0.092090, was prepared from eighteen strains of human tubercle bacilli, and was furnished to us by Drs. W. E. King and F. W. Baeslack, to whom we wish to acknowledge our appreciation.

other hand, the range of use of the autolysate is much greater and the reactions are more permanent, comparatively speaking, being readable even after from thirty minutes to one hour at 37 C. in the water bath.

It is also to be noted from these titrations, especially of the antigenic strength, that while in comparison the autolysate antigen gives ++++ reactions, the Miller bacillary antigen gives only a ++ or +++ reaction with a strong tuberculosis serum. The complete negative reactions are also not as sharp with a heavy emulsion of Miller's antigen, on account of the turbidity produced by the antigen added.

It is difficult to understand how Miller's antigen differs greatly from a simple bacillary emulsion, and in order to satisfy ourselves that the antigenic properties were mainly inherent in the bacilli held in suspension in the salt solution, the filtrate from Miller's Antigen 1305 was tested for antigenic strength and was found to be practically nil. This fact was also corroborated by noting that as the Miller antigen was allowed to settle out on standing, its antigenic titer gradually and markedly dropped.

With this introduction to the antigens used, and in view of the difficulties encountered in the use of the foregoing antigens, it is now possible to consider the results obtained in examining the serums of 327 patients and presented in Table 3. Of course, as previously stated, the classification and tabulation of tuberculosis cases is difficult on account of the diversity in the manifestations of the disease and its frequent appearance in clinically questionable form. It is easy enough to diagnose a case of intrathoracic tuberculosis with tubercle bacilli in the sputum, but glandular cases and those with concealed foci are not so easily diagnosed. It is often of great importance then to say whether an individual's symptomatology is due to disease in a focus which has been discovered on physical or Roentgen examination, or due to absorption of toxins from some nontuberculous crypt, such as tonsils, teeth, sinuses, kidney pelves, tubes, gallbladder or appendix. It may also be possible that the reactions given by so-called nontuberculous cases can be explained on the ground that these persons had such mild symptomatology from small nonrecognizable foci, which disappeared quickly while the patient was under observation, that there was a question whether active tuberculosis ever existed and the case was classified nontuberculous. The term "nontuberculous" is used advisedly with full consciousness of its inaccuracy. No attempt is made to differentiate between the infected and noninfected persons, but those who have not and never have had discoverable evidence of active tuberculosis are called nontuberculous. In the class of questionably tuberculous are included all cases which give definite signs of clinical tuberculosis either in the glands, the joints, or similar places, but in which there is no pulmonary involvement or in which tubercle bacilli have not been demonstrated. The rest of the

TABLE 2.—TITRATION OF ANTICOMPLEMENTARY AND ANTIGEN STRENGTH (POLYVALENT)*

		Antigen, C.c.											
		0.01	0.015	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.10	0.15	0.20
Polyvalent autolysate antigen.....	A	—	—	—	±	+	+	++	++++	++++	++++	++++	++++
	AC	—	—	—	—	—	—	—	—	—	±	±	A
Polyvalent Miller antigen..... P. D. 0.002000	A	—	—	±	±	±	±	+	++	++	+++	+++	+++
	AC	—	—	—	A	A	AA	AA	AA	AAA	AAA	AAA	AAA

* Readings after thirty minutes at 37 C. in water bath. The small amount of complement in the serum has evidently caused the P. D. antigen tests to hemolyze more than the A. C.

TABLE 3.—COMPARISON OF RESULTS WITH AUTOLYSATE ANTIGEN AND MILLER'S BACILLARY ANTIGEN

Stage of Disease	Activity	Sputum Negative†				Sputum Positive‡			
		A	M			A	M		
		1305	1305	1363	2417	1305	1305	1363	2417
Nontuberculous	.....	6+ 25—	0+ 31—	5+ 26—	2+ 29—				
Questionable tuberculous	.....	30+ 39—	20+ 49—	26+ 43—	25+ 44—				
Incipient	Inactive.....	6+ 3—	3+ 6—	3+ 6—	4+ 5—	2+ 6—	1+ 1—	1+ 1—	1+ 1—
	Active.....	5+ 8—	5+ 8—	4+ 9—	4+ 9—	5+ 10—	6+ 9—	6+ 9—	7+ 8—
M. A.	Inactive.....	0+ 1—	0+ 1—	0+ 1—	0+ 1—	1+ 2—	0+ 3—	0+ 3—	0+ 3—
	Active.....	8+ 2—	5+ 4—	7+ 3—	7+ 3—	35+ 16—	25+ 26—	30+ 21—	32+ 19—
F. A.	Inactive or chronic fibroids.....	0+ 3—	1+ 2—	1+ 2—	1+ 2—	8+ 9—	5+ 12—	4+ 13—	6+ 11—
	Active.....	1+ 0—	0+ 1—	0+ 1—	0+ 1—	62+ 40—	54+ 48—	59+ 43—	60+ 42—
Total cases	Inactive*.....	42+ 71—	24+ 89—	35+ 78—	32+ 81—	11+ 11—	6+ 16—	5+ 17—	7+ 15—
	Active.....	14+ 10—	11+ 13—	11+ 13—	11+ 13—	102+ 66—	85+ 83—	95+ 73—	90+ 69—

* This includes nontuberculous and questionably tuberculous.
† Either an absence of sputum or a negative sputum.
‡ At some time during observation, tubercle bacilli were found in the sputum.

cases are all with pulmonary involvement and are classified by the National Association Classification.

The table speaks for itself. As a general summing up, however, it may be stated that the percentage results obtained with the autolysate antigen, though slightly higher, do not differ greatly from those obtained with the bacillary Miller's antigens (the lower percentage in the latter case being easily accounted for by the transient nature of this reaction, and in tests run side by side with the more permanent reactions with the autolysate antigen, may easily have disappeared before being read). As far as differentiating active from inactive cases by either Miller's or the autolysate antigen, this is impossible. On account of the high percentage of positive reactions in the definitely tuberculous positive sputum cases, and in the absence of a positive Wassermann reaction with a standard antigen, this reaction seems to be definitely of value when positive for differential diagnostic purposes, as previously noted. It is noteworthy that in a large series of complement fixation tests (1,290 different serums) carried on in residents of a tuberculosis sanatorium, there were obtained ninety-two positive Wassermann reactions, and of these sixty-five gave cross fixation with all the bacterial antigens used. In the presence of a positive Wassermann reaction, therefore, any of the standard antigens (not reinforced or cholesterinized) being used, the presence of a positive complement fixation test for tuberculosis is of no practical value. In a series of tests in which a polyvalent autolysate antigen and the Parke, Davis & Co. polyvalent Miller's antigen 0.092090 were used for comparison, no appreciable differences in the percentage positive results were noted, corroborating the findings with the monovalent antigens cited above.

SUMMARY

A comparison of complement fixation tests for tuberculosis on 327 serums, the autolysate and Miller's bacillary antigen being used, revealed that:

1. There is not a great deal of difference between the positive results obtained by means of these antigens, probably because the same basic substances are used in the two antigens.

2. It is impossible by means of this test absolutely to differentiate active from inactive tuberculosis, the former cases giving a slightly higher number of positive reactions than the latter.

3. The autolysate antigen is to be preferred in performing these tests on account of the more transient nature of the results obtained with Miller's bacillary antigen and the difficulties encountered in obtaining a satisfactory antigenic unit.

4. It is advisable to run a Wassermann reaction on the same serum, using one of the standard antigens (not reinforced or cholesterinized), and in the presence of such positive reaction to draw no conclusions from the tuberculosis test.

5. The positive complement fixation test for tuberculosis in the absence of a positive Wassermann reaction is mainly of differential diagnostic value, and, taken with other findings, aids in making a definite diagnosis of tuberculosis.

Ptomain Poisoning.—That convenient refuge from etiological uncertainty, "ptomain poisoning," is a diagnosis that unquestionably has been made to cover a great variety of conditions, from appendicitis and the pain caused by gallstones to the simple abdominal distention resulting from reckless gorging.—E. O. Jordan.

THE PRESENT STATUS OF PITUITARY EXTRACT IN LABOR*

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ANACOSTIA, D. C.

Last year[1] I reported 3,952 cases in which pituitary extract had been used. In round numbers there was one maternal death in 565 cases and one fetal death in 146 cases. We shall see what the last year's experience with pituitary extract has brought forth.

I have collected reports on 1,293 additional cases, making a total of 5,245 cases. There are also numerous articles in which the number of cases is not given. Of course, it is realized that statistics here, as in all such subjects, are not to receive too great consideration, but still they certainly do give some idea of the rôle pituitary extract is playing.

One of the most striking points brought out is that the contents of an ampule, 1 c.c., is much too strong to be given in a single dose. It seems to be the consensus of opinion that the dose should be ½ c.c., which may be repeated frequently. Many of the serious consequences that have been reported probably would not have occurred had smaller doses been used. I have observed that the first dose usually produces the best reaction, and, when succeeding doses have been required, the results have not been so good. It may be repeated every thirty to fifty minutes. Its action is to promote and augment the normal rhythmic contractions of the uterus, being unlike ergot, which produces a long continuous contraction.

Occasionally there are failures. These are explained by the facts that sometimes, for some reason, the contents of an ampule are inert, and sterilization of the hypodermic syringe in alcohol is said to counteract the action of pituitary extract.

Its action on the blood pressure is to cause a slight temporary rise which is not great and does not last long. However, it is inadvisable to administer it in conditions which are associated with increased blood pressure, nephritis, eclampsia, toxemias, etc. To produce abortions and to induce labor it practically always fails. Bandler, who is its strongest advocate, uses it to distinguish false from true labor pains, asserting that after an injection if the pains do not increase in frequency and severity they are false pains.

It is generally conceded that to give pituitary extract in the first stage of labor is bad obstetrics. Its field of usefulness is in secondary inertia during the late stages of the second stage of labor in multiparas. Used here in properly selected cases, after due consideration by one who has good obstetric judgment, its results are usually happy, and it is a boon to the tired mother and her attendants. An ideal case for its use would be a healthy multipara with a history of previous normal labors, late in the second stage of labor, when the pains have become slow and weak, owing to uterine inertia, with a normal presentation and with the bag of waters ruptured, with the cervix fully dilated, and with the head molded and through the brim just above a relaxed perineum. In such a case the baby will usually be born in a remarkable manner after its administration. This may seem to be a narrow field, but we frequently run across just such cases. It is in this type of cases that pituitary extract frequently replaces the low forceps operation.

* Read before the Georgetown Clinical Society, Dec. 19, 1916.
1. Mundell, J. J.: Am. Jour. Obst., 1916, **73**, 306.

The placenta, as a rule, is detached more quickly than usual, and not quite so much blood is lost.

The administration of an anesthetic when the extract begins to act is a wise measure, and it is well to be always prepared to deliver with forceps. Occasionally, even in these well defined cases, delivery may not be immediate, and in such cases the result may be bad for the baby. To step beyond these narrow confines of indications is indeed entering on dangerous territory. Especially is this true as regards the life of the baby. It is recommended in small doses by some good authorities and is frequently used in cases of slight contraction at the brim with sometimes very good results if the birth occurs within a few minutes, but frequently with disastrous results to the baby if delivery is delayed. In such cases, forceps are urgently indicated. Its use in such cases is risky beyond question. Pituitary extract is recommended in cases of postpartum hemorrhage, but ergot is undoubtedly to be preferred.

As to the contraindications, it would seem to be plain that any case which does not come in the category of the indications described above would be an unfit case for pituitary extract. It should never be used in normal labor. Its use in primiparas, under any circumstance, is not without danger. They are more apt to have tetanic contractions, which may become alarming, with their attendant danger to the child. The fact that once injected there are no means of controlling its action, violent and tumultuous as it is on occasions, should be a bar against its indiscriminate use.

All means should be exhausted to arrive at a definite diagnosis, and the dangers of its use should be fully appreciated and due consideration given before its administration in any case, for such a powerful drug, used indiscriminately, will surely produce sad results to mother or child or both. That the use of pituitary extract must always be preceded by the use of the pelvimeter should be an ironclad rule.

During the past two years a number of untoward effects and consequences of severe character have arisen. As far as the maternal accidents and complications are concerned, I firmly believe that were the slogan of the hour "safety first" borne in mind, a number of them could have been prevented, for beyond question this drug has been greatly abused, as it has been given in too large doses, in cases in which its use was strongly contraindicated, and often, I am sorry to say, for no reason other than the accoucheur's expediency. Its use has been reckless and careless. The many reports of its rapid and safe action have been one of the greatest dangers. DeLee says, "It provides for the physician and his brother gynecologist a lot of chronic sufferers, often incurable, even after mutilating operations."

Lacerations of the perineum of varying degrees are common, and there are a number of reports of severe lacerations of the cervix well up into the body.

I have collected the reports of twelve cases of rupture of the uterus, out of 1,293 cases given. Thus we have a ruptured uterus in about every 106 cases in which pituitary extract is used. I admit that this is not accurate; at the same time I doubt whether it is far from wrong and perhaps it occurs oftener than this.

RUPTURES

Espent reports one case after two injections.

Rowland[2] reports a case of Dr. Dobbins of Baltimore.

Zullig reports a case in an elderly tredecipara with a narrow pelvis. The child was abnormally large. Pituitary extract and forceps were used. There was a history of premature delivery and perforation.

Knoof reports a case in a quintipara after one injection.

Stocker[3] reports two cases. One patient, a secundipara, had a generally contracted pelvis. The other had a normal pelvis; previous labors had been normal; the cervix was patent; there was history of recent abortion and curettage, and general poor health.

S. J. Druskin reports a case in which there was disproportion between the fetal head and the pelvis. There were rupture, laparotomy and death.

Mosher[4] reports the case of a colored woman, an ambulance case, in which repeated doses had been given. The fetus was in transverse presentation. The patient died within a few minutes after admission to the hospital. Necropsy revealed the fetus in the transverse position, with head and arm protruding through the rent.

R. Y. Sullivan[5] reports two cases, in each of which there was a contracted pelvis. One patient was a primipara and the other a multipara. One patient received two doses of 0.5 c.c. In each case a laparotomy was performed, revealing a large rent in the lower uterine segment. Hysterectomy was performed in each case, and both patients recovered, but the fetus in each case was dead. Dr. Sullivan is convinced that pituitary extract was the factor causing the rupture.

R. R. Huggins of Pittsburgh reports a case in which the measurements were normal, the os was dilated fully, and the head was in the pelvis. One c.c. was given, and within twenty minutes the patient was in state of extreme shock. Laparotomy two hours later revealed complete supravaginal amputation of the uterus. The child was in the peritoneal cavity.

McNeile[6] reports one case, in a quadripara. There were indications for use of the drug; the head was well engaged, there was complete dilatation, the membranes were ruptured, and there was decrease in the strength of the uterine contractions. A slight oblique contraction was not recognized. One c.c. of pituitary extract resulted in tetanic contraction and rupture in about seven minutes. A 7½ pound stillborn child was delivered by an easy forceps operation. Laparotomy revealed transverse rupture of the lower uterine segment from one broad ligament to the other. Supravaginal hysterectomy was done. The patient recovered.

An analysis of the detailed reports of all these cases of ruptured uterus with one or two exceptions reveals the fact that pituitary extract was abused, being given to patients who should not have had it. To my mind, to give a dose of pituitary extract to a woman who has a contracted pelvis, mild or severe, when the head has not passed through the pelvis, is criminal and, if the obstetrician is not aware of the contraction, he is still little short of being a criminal.

Even though the majority of these cases of rupture were due to its misuse, there were one or two cases in which the extract was apparently clearly indicated, Huggins' case, for instance, with normal measurements, fully dilated os and the head in the pelvis; yet rupture followed within twenty minutes after the injection of 1 c.c. Therefore, it would appear that when used in well indicated cases it is not without danger to the mother. However, I feel that when its indications and dangers are more fully recognized by the profession and much smaller doses are given, the dangers to the mother will be reduced to a minimum.

The effect on the child, however, presents quite a different phase of the subject. Numerous cases of asphyxia and fetal death have been reported when the diagnosis was definite and indications clearly defined.

2. Rowland, J. M. H.: South Med. Jour., 1915, **8**, 394-410.

3. Stocker, S.: Cor.-Bl. f. schweiz. Aerzte, 1914, **44**, 1658-1663.
4. Mosher, G. C.: Surg., Gynec. and Obst., 1916, **22**, 108.
5. Sullivan, R. Y.: Personal communication to the author.
6. McNeile, L. G.: Am. Jour. Obst., 1916, **74**, 432.

Moran[7] says that the action of the drug is to produce at times strong contraction but not retraction of the uterus, and thus is dangerous and may possibly act as a "medical cranioclast."

I have collected from the literature of the past two years reports of thirty-four cases of fetal deaths and forty-one cases of asphyxia pallida in which resuscitation was effected only after prolonged and vigorous efforts.

FETAL DEATHS

Johnson[8] reports four cases. The first patient was given three doses, 3 c.c. She was in labor fourteen hours. A high forceps operation was performed. The cord was twice around the neck. The child was born in asphyxia livida and revived in the usual way. In twelve hours it had a severe convulsion but was revived. There was no trace of injury due to forceps. The child died in a convulsion. The second patient, a primipara, aged 26, had a slightly contracted pelvis (general). Labor was induced at the end of the twenty-seventh week with bougies and pituitary extract. Two doses, 2 c.c., were given. The cord was around the neck; it appeared to have a true knot. The child was born in asphyxia pallida. The third patient, a secundipara, aged 32, with a contracted pelvis, in whom labor was induced at the end of the thirty-sixth week, received 2 c.c., two doses. Forceps were applied with great difficulty, and the child was born to live only a few minutes. The fourth patient, a primipara, aged 20, received 1 c.c. The child was born forty minutes later in asphyxia pallida. The cord was around the neck and was not pulsating. The scrotum of the child was much cyanosed, and the glans penis protruded through the prepuce. The child was stillborn. There were severe after-pains.

Bubis[9] reports two cases. The first patient, a multipara, received 1 c.c. A 10 pound baby was born in a few minutes. The head was not molded. There was a profuse serosanguincous discharge from the nose, and the child died six hours later, probably from fracture of the base. The second patient, a multipara, five minutes after receiving 1 c.c., gave birth to a 7½ pound baby, cyanosed, which died ten hours later in a convulsion.

Ingraham and Chase[10] report one case in a primipara who received 2 ampules following rupture of the membranes six minutes earlier. Slight meconium had appeared, though the fetal heart was normal, the cervix fully dilated, and the head just above the perineum. Pituitary extract had apparently no effect on contraction, but thirty-four minutes later the child was born. It was dead. One loose coil of cord was around the neck. There possibly may have been an occult prolapse of the cord, or the pituitary extract was at fault.

R. Y. Sullivan reports two cases of ruptured uterus (mentioned above).

Matheson[11] reports one case, in a primipara, aged 25, proceeding slowly with moderate pains. As conditions were not favorable for the application of forceps at the stage of full dilation, 1 c.c. of pituitary extract was given. The pains increased in strength and frequency. Progress was rapid, and when the head was on the perineum, the pains were almost continuous. There was a bad tear of the perineum, and the child was stillborn, both of which Matheson attributes to the pituitary extract.

George Mosher Clark reports the death of seven infants in private practice of good men. Pituitary extract was used early in labor, and no other apparent cause for stillbirth existed.

J. M. H. Rowland reports two cases. The first patient, a primipara, aged 38, had a normal pelvis. The fetus was in right occipitoposterior presentation. The patient received 1 c.c. The pains increased in strength, becoming quite violent. The head descended rapidly until the perineum was reached, when it was delivered slowly, owing to the extreme rigidity of the perineum. The child, which had been in good shape half an hour before, was dead. All efforts at resuscitation failed. The placenta followed immediately, and there was more than the usual amount of bleeding. The child was lost in the last few minutes owing to too early separation of the placenta. The second patient, a primipara, aged 24, had a slightly contracted pelvis. She was in labor twenty-four hours. The fetus was in the posterior position. The os was two-thirds dilated. No fetal heart was heard. The head was attempting to engage. The patient received 1 c.c. There was advance from partial engagement to the level of the ischial spine. In about three quarters of an hour, examination revealed prolapse of the cord beside the head but inside the cervix. Craniotomy was followed by delivery.

McNeile reported the case cited above.

FETAL ASPHYXIA, REVIVED, FORTY-ONE CASES

Ingraham and Chase report six cases of slight asphyxia and five of extreme asphyxia. One child, born ten minutes after the administration of pituitary extract when the head was just above the perineum, developed convulsions.

Ziegler reports one case of extreme asphyxia.

Seeley[12] reports three cases of extreme asphyxia.

Brockman[13] reports one case of severe asphyxia.

Rowland reports three cases of slight asphyxia and six cases of severe asphyxia.

Miller[14] noticed that in nine cases there was more asphyxia than was made necessary by the other conditions present. There were six cases of severe asphyxia, with considerable trouble in resuscitation.

Reginald Johnson reports eight cases with cyanosis and rigidity. The latter condition was marked in some cases for a number of hours. In a few cases there were convulsions. All the patients had a wide-awake appearance. There was one case of severe asphyxia pallida. One baby 4 weeks old was very sickly, and hardly capable of sucking the breast.

McFarlane[15] reports two cases. There was marked asphyxiation, and there was no other apparent cause than the use of pituitary extract.

In all of the cases the reporters felt that pituitary extract, if not the sole factor, was certainly a very potent factor in the production of the asphyxia. The majority of all papers on the subject noted that in the cases in which pituitary extract was used the babies presented more asphyxia than the conditions ordinarily would call for. Meconium is frequently seen in liquor amnii after administration of pituitary extract.

Of course, there are numerous writers who state that they have seen no deleterious action on the fetus.

The explanation of the asphyxia is that in all probability it occurs late, probably in the last several minutes of labor when the placenta is about ready to separate from the uterus. The tumultuous and prolonged contraction with the shortened intervals constrict the placental site, limiting the amount of blood going to the placenta. The blood, therefore, is not properly oxygenated. There is also the possibility of a partial premature separation of the placenta, shown by the fact that in several cases the placenta is expelled immediately after the birth of the baby. Another factor which may enter is that during a violent contraction the cord may be constricted between the uterine wall and some hard part of the fetus, for instance, the sacrum, trochanter or shoulder, resulting in asphyxia.

Heard reports three cases of diffuse nervous lesions due to cerebral hemorrhage and resulting in terrible afflictions, one at 9 months, one at 13 months and one

7. Moran, J. F.: Personal communication to the author.
8. Johnson, Reginald: Dublin Jour. Med. Sc., 1915, **140**, 241-260.
9. Bubis, J. L.: Surg., Gynec. and Obst., 1915, **21**, 659-662; Am. Jour. Obst., 1916, **73**, 673-675.
10. Ingraham, C. B., and Chase, P. M.: Colorado Med., 1915, **12**, 190-194.
11. Matheson, Farquhar: New Zealand Med. Jour., 1915, **14**, 294.
12. Seeley, W. F.: Tr. Clin. Soc., Univ. Mich., 1914, **5**, 128-132.
13. Brockman, R. St. L.: St. Barth. Hosp. Jour., 1915-1916, **23**, 8.
14. Miller, J. L.: West Virginia Med. Jour., 1914-1915, **9**, 411-413.
15. McFarlane, W. D.: Glasgow Med. Jour., 1915, **84**, 194-196.

at 19 months of age. In each case the parents were healthy, and the mother was a multipara with the history of previous normal births. There was no history of prolonged or difficult labor, but in each case pituitary extract was administered early in labor, and birth was precipitate very shortly after. In each case, efforts at resuscitation were required and convulsions followed later; in two they continue to recur. Heard[16] is convinced that these were cases of cerebral or meningeal hemorrhage and that pituitary extract was the etiologic factor in their production.

Obstetricians generally are coming to a realization that the child has a right to be born alive, and that the license to practice medicine does not also carry with it a license of executioner of the unborn child any more so than of the mother.

A COMPARISON OF STATISTICS OF 1914 AND 1916

1914	1916
Cases, 3,952.	Cases, 1,293.
Ruptured uterus, 8 cases, or 1 rupture in every 494 cases.	Ruptured uterus, 12 cases, or 1 rupture in every 106 cases.
Fetal deaths, 27, or 1 fetal death in every 146 cases.	Fetal deaths, 34, or 1 fetal death in every 38 cases.
	Asphyxia pallida, 1 case in every 32.

Pituitary extract probably has a place in the obstetrician's armamentarium, but for its undoubted bad effects on the child primarily, and on the mother in a lesser degree, it would seem that its field of usefulness is indeed a limited one.[17]

16. Heard, A. G.: Texas State Jour. Med., 1916, **12**, 264.
17. In addition to the references already given, the following will be of interest:
Bandler, S. W.: Med. Rec., New York, 1915, **87**, 55, 166; Am. Jour. Obst., 1915, **71**, 674; Arch. Diagnosis, 1915, **8**, 232-236; Med. Rec., New York, 1915, **88**, 607; New York Med. Jour., 1915, **102**, 882; Am. Jour. Obst., 1916, **73**, 77-92; Med. Rec., New York, 1916, **84**, 300.
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Trinks, O.: Prag. med. Wchnschr., 1914, **34**, 347-349.
Harrison, V. W.: Virginia Med. Semi-Month., 1914-1915, **19**, 391.
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Sachs, E.: Monatschr. f. Geburtsh. u. Gynäk., 1914, **40**, 544-573.
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Ebensen, K. A.: Arch. mens. d'obst. et de gynéc., Paris, 1914, **4**, and **5**, 99-124.
Vogt, E.: Ztschr. f. Geburtsh. u. Gynäk., 1914-1915, **76**, 746-762.
Fouche, F. P.: South African Med. Rec., 1915, **13**, 20.
Kinnear, J. A.: Canad. Pract. and Rev., 1916, **41**, 141-145.
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Quigley, J. K.: Pituitary Extract in Obstetrics, THE JOURNAL A. M. A., April 10, 1915, pp. 1222-1224.
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O'Connor, B. J.: Lancet-Clinic, 1915, **114**, 302-305.
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Gallagher and Gallagher: Surg., Gynec. and Obst., 1916, **22**, 490-493.
Telfair, J. H.: Am. Jour. Obst., 1916, **73**, 655-662.
Cogburn, H. R.: New Orleans Med. and Surg. Jour., 1915-1916, **68**, 738-742.
King, R. W.: Northwest Med., 1916, **15**, 125-128.
Foulkrad, C.: Therap. Gaz., 1916, **40**, 305-307.
Valens, J. A.: West. Med. News, 1916, **8**, 128.
Bell, W. B.: Liverpool Med.-Chir. Jour., 1915, **35**, 292-298.
Sheffield, H. B.: Am. Jour. Obst., 1915, **69**, 379.
Trapy: Monatschr. f. Geburtsh. u. Gynäk., 1915, **4**, No. 36.

Production of Camphor.—As set forth in *Commerce Reports*, April 13, 1917, the estimated production of camphor in Japan for the year ending March 31, 1917, was 2,148,197 pounds, an increase of 35,121 pounds as compared with the actual production of 1915-1916. The estimated production in Formosa during this period amounted to 6,619,461 pounds, an increase of 520,821 pounds, as compared with the actual yield of the preceding year. During 1916-1917, the estimated production of camphor oil in Japan was 4,237,852 pounds, an increase of 275,976 pounds as compared with the actual yield of 1915-1916. The estimated production of the oil in Formosa during the period named was 10,332,379 pounds, or 1,249,153 pounds in excess of the actual yield of 1915-1916.

ONE ROAD TO THE CONTROL OF HEART DISEASE

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This note begins with analogy and ends in exhortation. The analogy consists in a fundamental likeness between the demographic aspects of what I will venture to call subclinical infections of the heart, and incipient tuberculosis of the lungs.

No broad scheme for the prophylaxis of tuberculosis was possible until hygienists grasped the fact that tuberculous infection is wellnigh universal. Thereupon the practical procedure became one largely of devising means to prevent a harmless anatomic infection from developing into a dangerous clinical disease. Accordingly, whatever the physical condition may be which the clinician is called on to consider, he has in mind tuberculosis. Particularly in the case of children does he search out in tuberculosis an explanation of morbid symptoms. The result is the control of established tuberculosis.

Just as civilized mankind harbors almost constantly a more or less latent tuberculosis, so infective disease of the heart, provoking no classical symptoms, but potential for catastrophe, is wellnigh invariable at some period of life. The practical conclusion from such a premise is that, as in the case of tuberculosis, the latent anatomic derangement may break down into functional inefficiency in an unfavorable environment, such as added infection or overuse.

The proof of such a proposition can be established only after years of definite research; but sufficient evidence is at hand to justify the clinician in accepting it as a working hypothesis. As has been slowly apprehended in the case of tuberculosis, only on the assumption of the universality of cardiac infection will the clinician give adequate consideration to morbid signs which point to cardiac disease.

From the point of view of the public health officer, Darlington[1] has given statistical evidence that the mortality rate from heart disease is positively increasing throughout the United States, while the general death rate is steadily decreasing.

The fundamental basis on which must rest a belief in my thesis is the incompleteness of the evidence offered by physical signs of the organic condition of the heart. From the point of view of the pathologic anatomist, Warthin[2] has shown how doubtful is the ultimate cure of any infectious disease and, particularly in the case of syphilis of the heart, that profound organic infection may exist without appreciable clinical signs.

Necropsy records, including careful histologic and cultural examinations of the cardiac tissues, must furnish the crucial evidence as to the dissemination of heart lesions, and none can dispute the urgent duty of the pathologist to provide appropriate records. On the clinician, however, devolves the task of determining the functional capacity of the heart during life, and the practical application of methods to restore power and prevent failure.

We are not here concerned with the obvious cardiac lesions which are causing or threatening broken compensation, but only with what may be called "sneaking heart disease" in which the classical signs of insuffi-

1. Darlington, Thomas: Tr. Am. Clin. Assn., 1908, **24**, 120.
2. Warthin, A. S.: Tr. Assn. Am. Phys., 1910, **25**, 580; ibid., 1914, **29**, 416.

ciency are absent but in which there is a dangerous narrowing of what James Mackenzie calls the field of physiologic response.

It must be granted that the clinical data of physical diagnosis are absurdly insufficient to supply a reliable fund of information. While medical students are taught the words which signify that the pathologic importance of a heart lesion depends on involvement of the heart muscle rather than on changes in its lining membrane, the statement may be boldly ventured that the endocardial murmur is still the sole language through which the heart can speak its limitations to the casual examiner.

It is doubtful if the student keeps clearly in mind that even valve lesions are probably all due to infections conveyed not by the intracardiac flood which bathes the valves but by the capillary streams which spring from the coronary circuit, and that the slightest attack on a valve presupposes a more or less widespread infection of the myocardium. Granting a locus of infection within the heart, the teachings of the new science of immunology must lead us to suspect that at once the vital reactions of cardiac protoplasm become profoundly modified. Even the crude knowledge in our possession today points indubitably to the conclusion that heart tissue so attacked becomes, as it is said, "sensitized" to the particular form of poison with which it is inoculated, and thereafter abnormally receptive of new accessions of the same poison, and susceptible to them. The clinical facts that support this point of view are simply numberless. Fortunately for the preservation of the higher forms of life, protoplasm attacked by a foreign poison, after an initial stage of heightened susceptibility, is apt to acquire a specifically strengthened resistance to the noxa. But this "immunity" is always merely relative, and it were vain in a given case to estimate in advance the ratio of virulence to resistance.

The canny practitioner of medicine wisely takes his generalizations only as inductions from individual experience. Nothing, in my opinion, could be more fruitful for good than for the student of disease to estimate "the field of physiologic response" in the hearts of his patients, according to the views set forth.

EXAMPLES OF LATENT HEART DISEASE

A few concrete clinical examples of a familiar kind may make clearer the source of the impulse that led to this article:

CASE 1.—A man of fine physique, somewhat under 40 years of age, developed articular rheumatism. Nothing wrong had previously been found with his heart, but now there was detected obscurely at the apex a murmur of that peculiar quality which one learns to associate with fresh endocardial lesions. Under some medication and prolonged rest the physical powers seemed to become completely restored and the murmur, changed in quality, had nearly disappeared.

Many months later the patient was accepted for life insurance by a conscientious and competent examiner who, though informed of the history, could detect no cardiac lesion whatever. Since then, a number of times in the course of several years, the patient has applied for treatment of a sore throat, and on each occasion a slight bruit could be detected at the apex, the abnormal sound becoming temporarily a distinct murmur during a recent acute rheumatic attack involving throat and muscles.

My conclusion has been that this active business man carries a chronic infection of the heart which sensitizes the organ toward rheumatic toxins. It is impossible, of course, to pronounce whether the new endocardial murmur accompanying each attack of sore throat was the mechanical result of an altered circulation or a sign of fresh infective turgidity of the mitral valve. One who watches the quality changes in such a murmur day by day is apt to incline to the latter explanation.

Of the numerous tests to determine the functional efficiency of the heart, nearly all fall within the limbo of "academic" procedure. It is usually doubtful whether a functional inefficiency thus determined shows pathologic impairment or only lack of physical training or weakness of other coordinated organs.

CASE 2.—A man, aged about 25, of powerful physique, who had a perfectly compensated mitral lesion for some years and who was apparently in excellent health and strength, entered a military camp and was set to digging a trench.

A physical examination disclosed too late his unfitness for the task. A prolonged and fatal illness followed, bearing all the features of an infective cardiac disorder.

While the following explanation of this casualty cannot be proved, it harmonizes many facts and suggests a safe working hypothesis: In the foregoing subject, infection and resistance within the heart had been so balanced that functional processes remained normal. When excessive physical strain was put on the anatomically defective organ, its mechanical imperfection led to a "break in compensation," that is, the left ventricle ceased to deliver blood as fast as it was received by the right auricle. At once disturbance of cardiac nutrition was instituted. Immediately the biologic "resistance" of the heart tissues deteriorated, and the infective forces, which had been held in subjection, began to take on strength and to propagate their kind.

A tissue which is the seat of a viable infection is like a seesaw; on one end is seated physiologic resistance, on the other infective virulence; the balance represents the ratio of the two forces. Precisely in the same way we frequently find that a quiescent pulmonary tuberculosis is lighted up into progressive disease by injudicious habits. Indeed, the salutary relation of rest in active tuberculosis is identical, with greatly increased emphasis, in acute heart disease. In tuberculosis, Nature is prone to forgive the careless transgressor; in heart disease, perhaps more rarely.

CASE 3.—A strong youth had a slight indisposition which was evidently rheumatic, but he was not so ill as to refrain from riding several miles on his bicycle to an entertainment. The return journey was made against a strong wind. The boy was obliged to seek his bed on reaching home, and soon developed signs of a general cardiac inflammation that carried him off.

I insist that these cases do not find their complete explanation in mechanical overstrain of the heart, but indicate an intense intoxication, such as the immunologist is prone to demonstrate in his reactions of anaphylaxis. Moderate overstrain of a normal organ is probably an indifferent episode, but the same test applied to an infected organ sets in play chemical reactions which lead to physiologic destruction.

An adequate study of heart disease will disclose another line of contact with pulmonary tuberculosis. In the latter disorder, accumulating clinical experience points more and more frequently to the period of early youth as the time of primary infection. In the same way the student of breaking cardiac compensation can often trace the history through a long period of latent disease to a definite moment in early life when some

extraordinary exertion developed symptoms which themselves represented probably antecedent infection.

The cardiac tissue must have a great reserve of resistance against infection. We are perhaps too apt to consider that an infective agent attacking the heart possesses a virulence comparable to that of a streptococcus originating in a progressive surgical lesion or in a cadaver at necropsy. It is probable, however, that the vast majority of cardiac infections are due to germs of low virulence but great staying powers. Case 4 represents a typical history of chronic infection of low virulence:

CASE 4.—A professional man of 65 evidently suffered from an advanced stage of myocarditis with mitral insufficiency. His field of physiologic response was limited to the exertion of walking about 100 feet on the level. He applied to me about four years ago on account of dyspnea and "bronchitis." His trouble was pulmonary edema due to heart failure. Since then he has been restored many times from various ailments, mostly respiratory, all originating in overexertion. A rise of body temperature has played no part in his attacks, nor has there been, except during a recent desperate illness, any edema of the feet. Tracing the personal history of the patient, the first suspicious event was an attack of scarlet fever at the age of 6 or 7. From 12 to 14 he was very nervous, restless and fidgety, though there was no defined chorea. Spending his summers on a farm as a boy he remembered that when he was from 14 to 18 years of age, the exertions of field work would utterly prostrate him. He passed an examination for life insurance when about 20. He never had tonsillitis, but from about the ages of 21 to 27 he suffered several rather mild attacks of rheumatism. At 54 he was for some months the victim of melancholia, during which he made several desperate attempts at suicide. A doctor discovered "leakage of the heart" when he was 59.

A critical study of this history can hardly fail to lead to the suspicion that the heart disease began with the attack of scarlet fever in early youth.

It must be admitted that a heart which appears to be normal to superficial physical examination may still be confined to a narrowly limited field of physiologic adjustment beyond which health and life are endangered.

The practical physician must have a clear cut picture of the signs of latent cardiac debility in order to know when there is need of prophylactic care and how to achieve it.

One whose ear is trained to recognize the typical *lub-dup* of the normal organ in youth will miss the quality, quantity or rhythm of health in the heart sounds of most adult patients. Returning to our analogy of the lungs, the examiner will fail to find the "breezy" typical respiratory murmur in most chests he is called on to auscultate in patients of middle age. In either case it would be a mistake to pronounce the patient on the verge of clinical disease or even liable to it. Skill in physical diagnosis consists largely in distinguishing between morbid signs which are adventitious and those which imply specific organic derangement. Two obvious methods are open by which the clinician may estimate the physiologic state of the heart. One is through tests of functional efficiency, observing how perfectly the organ rises to and recovers from some unusual strain to which it is subjected. The other is by an analysis of the classical cardiac signs — volume, sounds, etc.

Functional tests often require considerable care to avoid danger to the patient:

CASE 5.—Some time ago a man past middle age was seen who evidently suffered from an advanced degree of cardiac degeneration but whose complaint was limited to intense dyspnea on exertion. The effort of lifting one arm above the head, while standing, caused the external jugular veins to bulge in a way to bespeak the inability of the right heart to deal with the slightest excess of inflow.

CASE 6.—Five or more years ago I made many observations on the jugular pulse of an aged man who presented evidence of mild myocardial degeneration. At any time on holding the breath the jugulars would swell and the normal auricular venous pulse would change into the ventricular form, indicating a temporary paralysis of the right auricle, overdistention and relative insufficiency of the tricuspid valve. The patient now, over 80 years old, is in excellent health.

CASE 7.—A young man of fine physique presented obscure cardiac symptoms, but manifested no distinct abnormality except slight dilatation of the heart. It was significant, however, that, following violent stooping exercise, the second sound of the heart disappeared at the apex. This, as pointed out by Broadbent,[3] is an indication that the right ventricle is overdistended and by its pressure against the chest wall throws the tip of the left ventricle away from it. Nothing more was heard of the patient for about fifteen years, when he was found dead in a cold stream in which he was trout-fishing.

A really rational test of cardiac efficiency involves a study of the blood pressures and of the state of vasomotor coordination, as can be done by comparing blood pressures in the recumbent and in the erect postures, as was pointed out by Crampton[4] and later by myself.[5] It may be worth while to repeat a former assertion[6] as to the probable relative clinical significance of the maximal or systolic as compared with the minimal or diastolic blood pressure: there is reason to assume that the height of the former determines the danger to the artery, while that of the latter measures rather the danger to the heart.

Janeway[7] has pointed out that in most cases the primary cause of syncope and sudden death is not heart failure but vasomotor failure when the subject assumes an erect position; nevertheless, it is doubtful whether a normal heart would ever stop because of postural draining of blood into the abdominal vessels.

The average clinical examination, however, is confined to a static study of the circulation, and undoubtedly a shrewd estimate may be made of the organic integrity of the heart irrespective of such gross signs as valvular murmur and without the strain imposed by excessive exercise. One of the salient characters to be observed is the quality of the first sound. There is a fine crepitant roughness of this sound, requiring the closest attention for its apprehension, sometimes intensified to a grinding character, which possibly is a sign of friction between the roughened muscle fibers, and therefore significant of myocarditis.

Often there is an identifiable abnormality in the first tone, such as once appealed to me in a case of a child, aged 5 years, for whom I had advised tonsillectomy. Though the danger of anesthesia was recognized, the child was given chloroform and nearly died under the operation.

When the suspicious roughness of the first sound is associated with dilatation of the heart, it may be assumed that cardiac overstrain has already occurred, and considerable care is required not to provoke a break in compensation.

Relative loudness of the second sound and weakness of the first sound at the apex is suspicious of

3. Broadbent, W. H.: Heart Disease, 1897, p. 194.
4. Crampton, C. W.: New York Med. Jour., 1913, **98**, 916.
5. Sewall, Henry: Am. Jour. Med. Sc., 1916, **151**, 491.
6. Sewall, Henry: Internat. Clin., Series 23, **4**, 12.
7. Janeway, T. C.: New York Med. Jour., 1907, **85**, 193.

myocardial degeneration. Possibly no better auscultatory test of the muscular power of the ventricles is available, as was demonstrated long ago,[8] than by increasing the pressure with which the bell of the air-conducting stethoscope is applied over the precordium. With increase of pressure, the intrinsically weak sound nearly or quite disappears.

There is a very common auscultatory phenomenon which frequently, if not usually, is a sign of cardiac infection. This is a vibratory character of the first sound, as from reduplication or triplication of the element. It has not the rising accent associated with mitral stenosis, and it persists throughout the respiratory cycle, is heard over the whole heart, and is not confined to the apex at the end of expiration, as is the common form of first-sound reduplication. I have seen this rattling character of the first sound develop during acute rheumatism, and persist after it when there seemed surely no valvular lesion. One patient developed it, following sore throat, during an attack of typhoid fever. He died, and at necropsy the only gross change found in the heart was slight congestion of the larger mitral cusp.

Remembering that heart disease in most cases is the result of infection and that the portal of entry is often within the oral cavity, the wise clinician will not underrate the peculiar importance of pharyngeal inflammations in the persons of those who present a suspicious cardiac condition. As was pointed out above, a heart sensitized to certain toxins may be expected to respond disastrously to new accessions of the specific poisons:

CASE 8.—A short while ago, a man, aged about 50, who harbored a passive pulmonary tuberculosis, developed a slight follicular pharyngitis, without elevation of body temperature. The pulse rate, however, was definitely raised, and the first sound of the heart, always under slight suspicion, became more distinctly abnormal in quality.

Directed by the line of reasoning just detailed, the patient was sent to bed for two days with the result of complete return to normal. Such an experience alone, of course, proves nothing, but I submit that it is an example of an effective and neglected method for the control of heart disease.

RECOGNITION AND TREATMENT OF HEART DISEASE

I am writing with the keen conviction that no systematic effort toward the control of heart disease is possible until the practitioner of medicine assumes the point of view regarding the prevalence of latent cardiac disease that he has slowly been led to take as to tuberculous infection of the lungs, that it is to be distinctly excluded in every case coming to diagnosis, and that in our study of the heart we should cease to await the development of the signs of mechanical imperfection, much as in the diagnosis of cancer of the stomach we no longer wait for a palpable tumor. In short, the clinician must learn to recognize heart disease while it is still a chemical disorder and before its morbid anatomy leads to physical signs.

A mechanical break in cardiac compensation probably finds its chief danger in degradation of cardiac nutrition and consequent depletion of resistance toward infective agencies.

As to treatment, when cardiac infection threatens to develop or when acute inflammation has already supervened, there is one fundamental resource without which nothing is of avail — complete mental and physical rest.

In chronic cases, which are apt to be overlooked unless previous infection has caused mechanical derangement of the valves, it would seem that we cannot do better than to act on the hints from our hard won experience with tuberculosis.

In an arrested case of tuberculosis, the patient is functionally normal within certain limits; not to overstep these bounds requires a mode of life ordered according to the rules of hygiene which must be carefully adapted to the needs of each person.

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8. Sewall, Henry: On the Use of Stethoscopic Pressure in Physical Examination of the Heart, New York Med. Jour., 1897, **66**, 758.

HERPES ZOSTER IN TABES DORSALIS AND GENERAL PARALYSIS OF THE INSANE

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Herpes zoster (acute posterior ganglionitis, acute posterior poliomyelitis, radiculoganglionic syndrome) is defined[1] as a "special type of erythematous eruption with formation of vesicles following the radicular distribution of the segment involved,[2] due to disease of the posterior roots and sensory ganglia." It may be put under two heads:[3] 1. Symptomatic zoster, due to (*a*) diseases and lesions of the nervous system implicating the posterior roots and ganglions: acute and chronic meningitis, myelitis chronica,[4] tabes dorsalis,[4] progressive muscular atrophy,[4] carcinoma of the vertebrae, Pott's disease, injuries; (*b*) acute infectious diseases, the micro-organisms[5] or toxins of which affect the ganglions and roots; (*c*) poisons by which the ganglions seem to be specifically affected (carbon monoxid, arsenic). Acute gastro-intestinal affections, pneumonia and tuberculosis are not infrequently contributing factors. 2. Essential or acute specific zoster, studied extensively by Head and Campbell.[6] This is a disease *sui generis*, and may be looked on as analogous to one of the acute infectious diseases. The eruption is usually preceded by a prodromal period in which there is malaise and fever; the disease may occur in epidemics; it confers immunity; it is unilateral, and there is no other condition, central or peripheral,[7] found to account for it.[8]

1. Jelliffe and White: Diseases of the Nervous System.

2. In describing the distribution of herpes zoster, it is said, more or less satisfactorily, to follow the course of certain peripheral nerves. This is convenient, but is incorrect. The distribution corresponds to the skin areas represented by the posterior ganglions and roots—radicular (sensory) segmental distribution as opposed to spinal (sensory) segmental areas of distribution and peripheral nerve distribution. The skin areas are different for these three.

3. Head: Herpes Zoster, in Allbutt and Rolleston: System of Medicine.

4. Blaschko: Beiträge zur Topographie der Äusseren Hautdecke, Arch. f. Dermat. u. Syph., 1898, **43**, 37.

5. Rosenow, E. C., and Oftedal, Sverre: The Etiology and Experimental Production of Herpes Zoster, THE JOURNAL A. M. A., June 12, 1915, p. 1968. In this and other articles, the authors emphasize the actual presence of the micro-organisms. Sunde, quoted by them in this article, demonstrated gram-staining diplococci in the gasserian ganglion in an old man who died of bronchopneumonia three and a half days after the appearance of an ophthalmic herpes.

6. Head, Henry, and Campbell, H. W.: The Pathology of Herpes Zoster, and Its Bearing on Sensory Localization, Brain, 1900, **23**, 353.

7. Rosenow, E. C.: Elective Localization of Streptococci, THE JOURNAL A. M. A., Nov. 13, 1915, p. 1687. Rosenow and Oftedal (Note 5) consider the infection atriums as the primary focus, and have isolated streptococci from the ganglions.

8. Paralysis may occur in specific herpes zoster due to secondary involvement of the cord. Hewlett, A. W.: The Motor Complications of Herpes Zoster, California State Jour. Med., 1906, **4**, 119-121. Magnus, V.: Herpes Zoster, Norsk. Mag. f. Lægevidensk., 1916, **77**, 1612; abstr., THE JOURNAL A. M. A., Jan. 20, 1917, p. 234.

Herpes zoster may develop in any phase of paresis,[9] often coming at the onset before the appearance of the characteristic symptoms. It may develop in the course of the lightning pains of tabes.[10] In tabes and paresis, herpes zoster is incidental to an involvement of the ganglions and roots in the pathologic processes of these diseases,[11] although it must not be overlooked that the diseased condition of the nervous system may open the portal for the specific form. It is interesting to note, incidentally, that Knowles[12] mentions the occurrence of herpes zoster together with a maculopapular syphiloderm, and also the occurrence of herpes zoster in a patient with gummas.

Zoster involving the entire length of the upper extremity alone (as in the first case report) appears to be uncommon. Knowles[12] observed four cases of zoster involving the entire length of the upper extremity out of 273 cases of herpes zoster in which the distribution was mentioned.[13]

REPORT OF CASES

CASE 1.—M. K., aged 50, laborer, was an advanced paretic admitted to the Philadelphia Hospital for the Insane, Feb. 10, 1915. Oct. 25, 1915, there was an eruption confined to the right upper extremity as follows: Starting above the axilla the eruption ran along the posterior margin of the deltoid muscle; it occupied an area corresponding to the lower half of the body of the deltoid; below this the outer (lateral) portion of the upper arm, including the outer portion of the flexure of the elbow, and the outer aspect of the forearm, both anteriorly and posteriorly. There were a few vesicles on the dorsum of the hand, slightly beyond the wrist, in line with the metacarpal bone of the index finger; there were a few vesicles toward the palmar aspect of the hand, and along the metacarpal bone of the thumb, extending to the base of the nail. The distribution[14] of the eruption corresponded to the fifth, sixth, seventh and eighth cervical nerve roots (according to the nomenclature of Bärensprung, a cervicobrachial zoster). The vesicles were in groups, on a reddened base; some were filled with hemorrhagic serum. In some places they were broken down with ulceration. The patient had not received arsenic, iodids or any other medication; he had not been injured. There was no evidence of any actual paralysis, or any alteration of the reflexes from the previous condition. The patient did not seem to suffer any pain; this may have been due to his advanced dementia. The teeth and the tonsils appeared to be normal.

A spinal puncture was done, October 28. The fluid was under much increased pressure (spurted). The Wassermann reaction was positive, culture negative. The Wassermann reaction in the blood, taken the same day, was positive. The patient's temperature was normal throughout the course of the eruption. A white cell count, November 1, revealed: leukocytes, 6,900; neutrophils, 64 per cent.; lymphocytes, 34 per cent.; mononuclears, 1 per cent.; eosinophils, 1 per cent. The patient also had psoriasis, which was present on admission.

The eruption had healed (with a few scars) at the time of the patient's death, which occurred, Nov. 23, 1915.

Owing to an oversight, the spinal cord was not removed at necropsy. Histologic examination[15] of the brain confirmed the diagnosis of paresis. The upper cervical cord showed marked involvement of both the tracts of Goll and Burdach.

CASE 2.—T. M., man, aged 49, vagrant, was admitted to the wards of the Philadelphia Hospital for the Insane, Oct. 26, 1915. The patient was a paretic with some tabetic symptoms. The eye grounds were normal. The Wassermann reaction was positive in both blood and spinal fluid. Several teeth were represented by old decayed roots.

November 5, a redness was noticed on the right side of the forehead. The next day vesicles appeared.

November 6, the border of the eruption started at the hair line laterally and went across to the root of the nose, including the upper lid; the conjunctiva was reddened. There were a few vesicles on the bridge of the nose. The border of the rash then extended up the midline; the upper border was slightly beyond the hair line of the forehead.

November 8, the eruption became infected.

November 9, the patient's temperature was 100 F. It was normal the next day.

November 18, the eruption was practically healed, with rather extensive scarring. The hair line of the eyebrow was involved in a scar with some loss of hair. The patient complained for a time of slight hyperesthesia in the region involved. The sense of pain in this area was considerably diminished; the touch and temperature senses were normal.

The following report on the spinal fluid was submitted by Dr. Kolmer: Clear; total cells, 30 per cubic millimeter, all small lymphocytes; protein reaction positive: Noguchi, +; Pandy, +; Nonne, +; Kaplan, ++; sugar, normal; colloidal gold, 5555544311 (paretic curve); Wassermann reaction (dose 0.8 c.c.), strongly positive; cholesterinized antigen, ++++; alcoholic syphilitic liver, ++++; acetone insoluble lipoids, ++++.

The patient's teeth subsequently became loose. Dementia and physical signs increased. He died, July 23, 1916, in a congestive attack, associated with restlessness and stupor; there were no convulsions or paralyses. Aside from atheroma of the aorta, and chronic myocardial and renal changes, the general organs showed nothing of note. Grossly the brain showed the following lesions of general paralysis: (1) chronic hemorrhagic pachymeningitis; (2) chronic leptomeningitis of the superior and anterior portions of the cerebrum, and (3) granular ependymitis of the floor of the fourth ventricle. There was no apparent cerebral atrophy. Histologic examination confirmed the diagnosis of paresis. The perivascular infiltration was unusually severe in the occipital pole. Gliosis was fairly marked in the column of Goll. The gasserian ganglion and its roots showed fibrosis and also round cell infiltration. The picture was one of chronic and also acute changes, the latter being of a nonseptic type, and probably specific (syphilitic).

CASE 3.—P. H., aged 51, admitted to the wards of the Philadelphia Hospital for the Insane, June 21, 1915. Blindness commenced five years before, and mental symptoms two months before admission. The eyes showed nystagmus; the pupils were equal, slightly irregular and inactive. There was complete optic atrophy of the eye grounds, probably primary. The knee jerks were absent. Romberg's sign was present when the eyelids were closed; there was ataxia in the lower extremities; there had been slight difficulty in holding the urine

9. Hérissey, Paul: Études cliniques sur les troubles trophique dans la paralysie générale, Paris thesis, 1903. De Fursac and Rosanoff: Manual of Psychiatry.

10. Osler: Practice of Medicine.

11. Poincaré and Bonnet (Ann. méd.-psych., 1868 and 1876) first described structural and functional alterations of the sympathetic ganglions in paresis, and Klippel (1892) first described the peculiar microscopic visceral lesions which he attributed to ganglionic changes (Martial Vignaud, Historique de la paralysie général, Paris thesis, 1902). These chronic degenerative changes in the ganglions, which are distinct from the acute changes in paresis causing herpes zoster, may be secondary to involvement of the nervous system central to the ganglions (retrograde degeneration).

12. Knowles, F. C.: Herpes Zoster, Report of Two Hundred and Eighty-Six Cases, with a Review of the Unusual Features of the Disease, Pennsylvania Med. Jour., 1911-1912, **15**, 615-622.

13. Other cases, to which I have had access, are: Stopin, Le zona du membre supérieur, Paris thesis, 1882-1883. The entire length of the upper extremity was involved in six instances out of seventeen cases of herpes zoster of the upper extremity. Gordon, Alfred: Cervico-Brachial Herpes Zoster, Am. Med., 1909, N. S., **4**, 627-630. Carpenter, G.: A Case of Herpes Zoster Extending to the Finger Tips, Rep. Sc. Study of Diseases of Children, London, 1905, **5**, 3. Pfeiffer (quoted by Blaschko) quotes one case (Footnote 4). In larger series of herpes zoster reported (Hoennicke, Cantrell, Greenough) the exact distribution of the eruption is not mentioned.

14. In determining the level involved, one must take into account the following factors: 1. A given area, though usually supplied by a given root, may instead be supplied by the root above, with corresponding changes in the other roots, or by the root below, with corresponding changes in the other roots. 2. In a very large proportion of cases the eruption does not occupy the whole area of a single nerve root. 3. The shape of the part involved (whether thin, stout, etc.) makes a difference in the appearance of the eruption. 4. There is a certain amount of overlapping of supply in a given segment by the one above and below. In outlining the area of involvement one includes the zone of hyperemia as well as the eruption proper. Cases in which only a single segment is involved are of value in determining the area supplied by a given nerve root. In any one case one cannot be absolutely certain which root is involved unless confirmed by necropsy.

15. I am indebted to Dr. Samuel T. Orton for the histologic studies.

during the last six months; the teeth and the tonsils were normal. The patient had a psychosis, but was not a paretic. Tabes dorsalis was diagnosed; a positive mental diagnosis was not made.[16] Dr. Kolmer submitted the following report on the spinal fluid, June 14, 1916: Clear, 90 cells per cubic millimeter; 92 per cent. small lymphocytes; protein reactions strongly positive: Noguchi, +++; Nonne, Phase I, +++; glucose content, normal. Wassermann reaction (dose 0.8 c.c.), ++++, with the three antigens used above; Lange colloidal gold test: typical paretic curve."[17]

June 6, there was redness on the right side of the forehead. June 8, vesicles were well marked. The outer border of the rash extended upward from the outer end of the eyebrow; the inner border was at the midline. The rash included the upper lid, and the nose to the ala; the conjunctiva was reddened, but contained no vesicles. The rash extended backward to slightly beyond the parietal eminence. The blood count was normal. There was a slight rise of temperature a few days later due to secondary infection. June 21, the eruption had well disappeared, except for scabs along the eyebrow.

At present, on the forehead, upper lid and the bridge of the nose, the areas which were formerly the bases of the vesicles show loss of pigment. Neither in these whitish areas nor in the normal appearing skin can any disturbances of sensation be demonstrated.

CONCLUSIONS

Of three patients having an attack of herpes zoster, two were paretics and one a tabetic. The cases of herpes zoster were of the symptomatic variety, that is, due to involvement of the ganglions in the pathologic processes of the disease from which the patients were suffering. The nature of the ganglionic changes is in all probability specific, that is, due to spirochetes or toxins.

Thirty-Fourth and Pine Streets.

16. The patient's mental condition may have been dependent on syphilitic changes or alcoholism. On admission, dementia, though present, was not very apparent; it has since progressed, but is not extreme. There is nothing, however, in the clinical symptoms, which suggests paresis.

17. Solomon, Koefod and Welles state that a typical paretic curve may occur not only in patients who do not have paresis, but also in patients who do not even have syphilis. I have seen two nonparetics with typical paretic curves. In one of these at least, the question of paresis sine paresi does not enter (Solomon, H. C.; Koefod, H. O., and Welles, E. S.: Diagnostic Value of Lange's Gold Sol Test, Boston Med. and Surg. Jour., 1915, **172**, 956-960. Solomon, H. C., and Welles, E. S.: Varieties of the Gold Sol Test (Lange) in Several Loci of the Cerebrospinal Fluid System, ibid., 1915, **172**, 625-629). A paretic curve is reported in a child suffering from poliomyelitis, with a positive Wassermann in the spinal fluid (Felton, L. D., and Maxcy, K. F.: The Colloidal Gold Reaction of the Cerebrospinal Fluid in Acute Poliomyelitis, THE JOURNAL A. M. A., March 10, 1917, p. 752). These observations show that the paretic curve occurs occasionally in conditions other than paresis. All of our consulting psychiatrists have agreed that the patient described above is not a paretic.

Milk Distribution a Public Utility.—A joint commission of Pennsylvania, Maryland and Delaware appointed to study the milk question with reference to price, distribution, etc., headed by Prof. Clyde L. King of the University of Pennsylvania, recommends (*Survey*, February 24), that milk distribution shall be recognized as a public utility. The recommendations extend to both production and distribution, and include suggestions for increased state and municipal supervision, as well as an attempt to harmonize the interests of producers, dealers and consumers. Recognition of milk distribution as a public utility implies the keeping of accounts by dairymen and dealers in a form prescribed by the state, the state examination of accounts, the licensing of all dealers, as at present; the licensing of testers in receiving stations, and the standardization of prices. Seasonal inequality of production has been an obstacle to the maintenance of uniform price to producers, which makes the financial success of the dairy business uncertain. This, it is suggested, can be overcome to some extent by the storage of milk in the form of butter, cheese and condensed milk, and the stimulation of new uses at times of greatest yield. The competition of milk with other food products and the matter of freight rates complicate the milk supply problem.

A CASE OF BROWN-SÉQUARD PARALYSIS *

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Until recently, many workers, following Brown-Séquard, held that impressions of pain and temperature pass upward through the gray matter, while those of touch and sense of position ascend through the dorsal columns. Petrén,[1] from a collection of reports of a large number of cases, concluded that impressions of pain and temperature pass through the opposite lateral column, and of the muscle sense through the homolateral dorsal column, while two paths are open to touch, one through the uncrossed exogenous fibers of the dorsal column, and another in the opposite lateral column.

Head and Thompson[2] confirmed these conclusions and showed that the ability to recognize the simultaneous contact of two compass points depends on impulses traveling through the homolateral dorsal column. Head and Holmes[3] found that the appreciation of weight and recognition of size and shape are frequently lost on the paralyzed side, and concluded that the impulses which subserve these functions ascend uncrossed through the dorsal columns. Egger[4] has shown that the sense of vibration of a tuning fork depends on the integrity of the dorsal columns.

Recently Petrén,[5] from a review of ninety-four cases of stab wounds of the spinal cord, has concluded that fibers for pain and temperature sense have their course near the lateral column of the cord. For touch two pathways are present: first, in the posterior columns in the long exogenous fibers and, second, in the crossed lateral columns somewhere along with pain and the temperature sense. The fibers for muscle sense do not run in a crossed tract; they run in two columns, one in the homolateral posterior columns and the other in the lateral cerebellar bundle. They run mediad to the fibers for pain and temperature and laterad to the pyramidal tract.

From the notes of forty-five cases of spinal injuries of warfare in which the Brown-Séquard syndrome occurred, Holmes[6] found that the upper limit of anesthesia to the different forms of sensation varied, and that as a rule the upper border of the contralateral loss did not correspond to the segmental level of the injury. In the middorsal region, the crossing of pain and thermal impulses is complete in one segment. Thermal impressions cross less rapidly than those of pain, and touch requires two segments for decussation. In the upper dorsal segments, pain and temperature cross in two and frequently in three segments. At the fourth cervical segment the decussation of pain requires from five to six segments, and that of thermal impressions from four to five.

Holmes concludes that the fibers which convey impression from the lower spinal roots are probably placed lateral to those which have later reached the contralateral side.

* Read before the Chicago Neurological Society, Dec. 21, 1916.

1. Petrén: Skantin. Archiv. f. Physiol., 1902, **13**, 9.
2. Head and Thompson: Brain, 1906, **29**, 537.
3. Head and Holmes: Brain, 1911, **34**, 102.
4. Egger: Rev. neurol., 1902, **10**, 549.
5. Petrén: Neurol. Centralbl., Jan. 2, 1916.
6. Holmes: Brit. Med. Jour., Dec. 11, 1915, p. 855.

REPORT OF CASE

Oct. 1, 1916, a man, aged 27, whose previous history has no bearing on the present condition, and in whom the Wassermann reaction was negative on the blood serum, was stabbed in the left groin, the left buttock, and in the back of the neck. The wound in the neck extended from the fifth to the seventh cervical vertebrae. The right leg was immediately paralyzed. For three days the patient complained of severe shooting pains in both

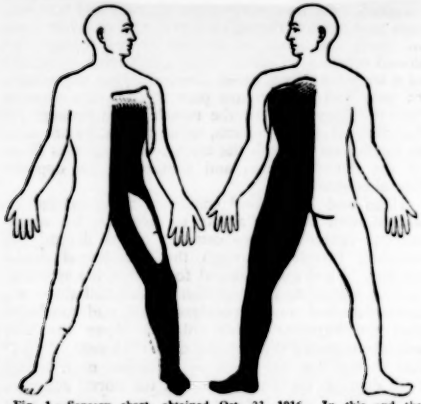

Fig. 1.—Sensory chart, obtained Oct. 23, 1916. In this and the accompanying illustration, oblique solid lines indicate areas of thermanesthesia; oblique broken lines, diminished temperature sense; vertical solid lines, diminished pain sense; solid black areas, loss of pain and temperature sense; within the area bounded by the double line is found a diminution in the acuteness with which pain and temperature are appreciated; the blank space over the left leg represents a loss of sensation in all its forms.

arms. He was unable to move the right leg for four days, then movements of the thigh and leg returned, and on the sixth day he was able to get out of bed, and more or less rapidly regained all function except dorsal flexion of the foot and extension of the toes. He remained in the hospital until October 18, and was examined five days later.

He showed a weakness of the muscles of the right side of the body below the level of the fifth and sixth cervical segments; the groups represented by these levels were more markedly affected than those of the fifth alone, as the deltoid especially, and the pectoralis major, supinator longus and biceps were feeble, and the supraspinatus, teres minor, subscapularis and serratus magnus were probably not affected. The muscles representing the lower levels were still weaker, the greatest disability being in the extensor of the index finger, the opponens pollicis and the first dorsal interosseus. The motor disability was most marked in the lower extremity, where the dorsal flexors of the foot and extensors of the toes showed the greatest weakness. The right side of the abdominal wall was paretic. Ankle and knee clonus were present on the right side; the rectus jerk was greater on the right side. The deep reflexes in the upper extremities were equal and about normal, with the exception of the right scapulohumeral, which was increased. A Babinski phenomenon was present on the right side. The right cremasteric and abdominal reflexes were absent. The sympathetic and organic reflexes and vasomotor functions apparently were normal on both sides. The pupils were normal. Sensation to touch was disturbed only over the area supplied by the anterior femoral cutaneous nerves of the left side. They had probably been severed by the stab wound in the groin. There was an analgesia of the left side below the level of the third dorsal segment. For a short distance above this, pain sense was diminished, and below the fourth cervical segment, although very slight pain stimuli were felt on the left side, the sensation which they awakened was more acute on the right side. Temperature sense was lost to a level slightly higher than the third dorsal, and for a small band above this was diminished. As with the temperature sense, as high as the level of the fourth cervical segment temperature stimuli were more acutely on the right than on the left side. The slightest stimulation, however, was correctly interpreted on the left side in this area. Over the arm only that portion represented by the second and third dorsal segment showed a similar condition as to pain and temperature. Joint and muscle sense were apparently normal, but slight pallesthesia was present on the right side. No difference in tactile space sense existed.

Since the time of examination an improvement has been noted in the motor functions; the same muscle groups, however, are affected and in similar proportions. The thermal anesthesia has retreated caudally so that the upper border is at the sixth dorsal level. Above this to the fifth dorsal either heat sense alone is lost, or heat and cold slightly diminished. Analgesia likewise has retreated caudally to a level lower than the thermal anesthesia, namely, the eighth dorsal segment. Up to the level of the sixth dorsal, pain sense is diminished. The same acuteness of sensation to heat and pain is present in the area of the right side as was noted at the first examination.

COMMENT

This case is of particular interest because of several features:

1. The low level of the crossed sensory disturbance as compared to the direct motor injury illustrates the obliquity of the crossing of the sensory fibers, as pointed out by Gordon Holmes.

2. The caudal retreat of analgesia, and more slowly of thermal anesthesia, indicates a lamellar arrangement in which the fibers that convey impressions from the lower spinal roots are placed laterad to those that have later reached the contralateral side.

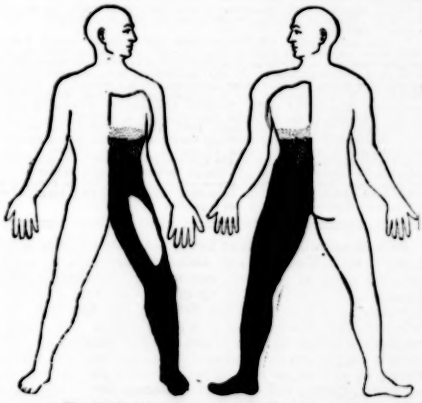

Fig. 2.—Sensory chart, obtained Dec. 20, 1916.

3. As the upper margin of the anesthesia to heat is slightly higher than that to cold, it is probable that the afferent impulses which subserve the latter decussate more slowly.

25 East Washington Street.

Actions, not Words.—A slender acquaintance with the world must convince every man, that actions, not words, are the true criterion of the attachment of friends.—George Washington.

TETANUS, WITH SECONDARY MULTIPLE NEURITIS

REPORT OF A CASE WITH RECOVERY *

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M. J., man, aged 19, Italian, laborer, who spoke little English, and whose family history and previous medical history were unascertainable, had received a rather slight lacerated wound of the left ring finger ten days prior to admission to the sanatorium, which occurred, Feb. 20, 1915. The finger had not been cared for properly. The patient was apparently delirious on admission, and it was because of these mental symptoms, the cause of which had not been ascertained, that he was sent to the sanatorium. He had a general convulsion shortly after admission. In my absence, the diagnosis was correctly made by Dr. R. M. Hope, who thoroughly opened and disinfected the wound. The patient later was resistive, and attempted to bite and scratch. The temperature was 102 by rectum. Three thousand units of tetanus antitoxin were given subcutaneously by Dr. P. T. Hope later in the evening, together with morphin and chloroform. The patient had no further convulsions until the next morning at 10:30. He was placed on hypodermic injections of 10 minims of 2 per cent. solution of phenol (carbolic acid) every two hours, and chloral and bromid by the rectum according to circumstances. He had another convulsion at 5 a. m. on the third day, opisthotonos being marked in this and in most of the succeeding convulsions. He had another seizure at 9:30 a. m. As difficulty was experienced in securing antitoxin, the second injection of 9,000 units, given subcutaneously, was not received until forty-eight hours after the first. Morphin in one-fourth grain doses was given to alleviate pain, from which the patient suffered intensely at intervals, apart from the convulsions. On the fourth day at 4 p. m., 5,000 units of antitoxin were given intradurally after lumbar puncture, and 3,000 units were injected at the seat of the injury in the finger. Bacteriologic and cytologic examination of the spinal fluid (15 c.c.) withdrawn on this occasion was negative.

As no convulsions appeared after the third day and the patient's general condition was improved, 5,000 units were given intraspinally and 5,000 units intravenously on the fifth day, no antitoxin on the sixth day, 7,000 units subcutaneously on the seventh day, and 5,000 units subcutaneously on the eighth day, it being felt that the disease was now under control. This was an error, however, as two convulsions occurred on the ninth day, after five free days. From the ninth to the seventeenth days thirteen convulsions occurred, most of which were severe. During this period from 5,000 to 15,000 units were given daily, chiefly by the intravenous and intraspinal routes. Two subdural injections of 4 c.c. each of magnesium sulphate solution (7 gm., 2 cg. to 100 c.c. distilled water) were also given during this period (the fourteenth and sixteenth days) with seemingly beneficial results. On the eighteenth, nineteenth and twentieth days, no convulsions occurred, and only 5,500 units of antitoxin were given during this period. Mild convulsions reappeared, however, and occurred daily from the twenty-first to the twenty-fifth days. During this period only 10,000 units of antitoxin were given, as the convulsions were noted to be diminishing in severity and the patient was beginning to show serious paralytic (or perhaps anaphylactic) symptoms, such as dysphagia and very slow, weak and irregular heart action. There were no convulsions after the twenty-fifth day. On the fifteenth day the left forearm and hand were found to be much swollen, and on the twenty-first day much pus was evacuated from an abscess in the elbow region, evidently due to infection from one of the intravenous treatments. The hypodermic injections of 2 per cent. solution of phenol were continued throughout the treatment, save on two occasions when it had to be stopped for a couple of days to permit the urine, which had become very smoky, to clear up. Chloroform was used only when the intradural injections were given.

Three weeks after the last convulsion, it was noticed in bathing the patient that he was very sensitive to pressure or touch in his arms. This soon extended to the limbs. Examination revealed extreme tenderness along the peripheral nerve trunks as well as general hyperesthesia. This condition was accompanied by loss of power in the extremities and general atrophy of the muscles, so that the patient became extremely emaciated. The hands were swollen at first, but this gradually subsided. There was difficulty at times in swallowing. Trophic changes were not marked, though the patient had to be watched closely to prevent bedsores, and was manifestly suffering from a generalized peripheral neuritis. The presence of anesthesia could not be definitely determined because of the patient's mental condition. Under massage and good feeding the condition began to improve slowly after two weeks. At the end of a month from the beginning of this complication the patient had so far improved as to be able to walk a little with assistance.

In connection with these physical evidences of neuritis there was an abnormal mental condition, characterized by a tendency to grin in a silly manner and to general emotional instability. This condition gradually passed off as the physical condition of the patient improved. He was discharged as convalescent, May 26, a little over three months after admission. He had not fully recovered from his neuritis when he was discharged, and was unable to work for about two months after returning home. He called recently at the sanatorium to state that he was working every day and had fully recovered his usual health.

COMMENT

In this case the effect of the antitoxin is well worth studying. In all, 152,500 units of antitoxin were given, 45,000 units in nine doses subcutaneously, 56,500 units in nine doses intraspinally, and 51,000 units in eight doses intravenously. After the subdural injections on the fourth and fifth days and the intravenous injection on the fifth day, there were no more convulsions for five days and the patient's general condition was greatly improved. The treatment, however, was not continued by these methods; two subcutaneous treatments were given on the fourth and fifth free days, with the result that convulsions began next day and the disease became more aggravated. Had the subdural and intravenous treatments been continued daily, I feel convinced that the disease would have ended at this point. The results here, therefore, are in harmony with those of Park, Irons[1] and others who have found the combined treatments by the various routes mentioned much more efficacious than the subcutaneous treatments alone.

Undoubtedly the most interesting question, however, is as to the etiology of the neuritis. The possibilities are: (1) toxic action from the antitoxin; (2) the infection of the arm, or (3) toxins arising from the action of the tetanus bacilli.

As to the first point, although antitoxin was used in considerable quantities, neuritis is not regarded as one of the allergic phenomena to be expected, although the patient showed at times symptoms possibly ascribable to anaphylaxis, such as respiratory and cardiac irregularity and weakness.

Secondly, while infection is a possibility, it seems unlikely in view of the fact that the infection was local, it did not cause severe constitutional symptoms, the pus was promptly evacuated, and the abscess was kept well drained.

In view of the severity and duration of the attack, it seems most probable that the neuritic symptoms

* Read before the Pittsburgh Neurological Society, Oct. 10, 1915.

1. Irons, E. E.: The Treatment of Tetanus by Antitoxin, THE JOURNAL A. M. A., June 27, 1914, p. 2025.

resulted from the toxins generated by the tetanus bacilli. Although, in view of the frequency of neuritis following diphtheria, we might expect it in tetanus, as a matter of fact it has been rarely reported and there is almost no literature on the subject.

Anders[2] speaks of paralysis as being a rare sequel, but does not particularize as to the nature of such paralysis as has been observed. He mentions also the significant fact that Kitasato has produced paralysis in man by injecting tetanus toxin into the femoral vein.

The only article found on the subject was that of Hnatek.[3] He reports the case of a woman, aged 54, who developed traumatic tetanus. After two weeks she began to improve, but at the beginning of the fourth week she developed severe pain in the left shoulder, followed by pain, swelling and later numbness of the left hand. The condition improved under treatment. It is noteworthy that this patient was not treated with antitoxin.

Hnatek, in commenting on the case, states that while Goldscheider[4] considers that changes in the peripheral nerves from tetanus are impossible, there is no doubt that the peripheral nerves sometimes react to the tetanus toxin. After discussing at some length the possible mechanism of trophic changes in neuritis he says:

> The fact that neuritic symptoms appear after an injection of antitoxin, as well as without it, speaks for the tetanotoxin as the etiologic basis of the neuritis. But why is the action of the tetanotoxin so rarely accompanied by an inflammation of the nerves, and why doesn't it act at the time it passes through the nerve? There can be only this explanation, that a long duration is necessary to produce inflammation. If the tetanotoxin is really the cause of the neuritic phenomena, there is no other possibility than this, that a long contact with the nerves is necessary.

I feel that Hnatek has reached the most probable explanation of these cases. It is the protracted cases of tetanus ending in recovery that are apt to be followed by neuritis, as it is only in such cases that the toxin has the opportunity to act for a sufficiently long time to produce neuritis as a sequel. It seems to me most probable that under the newer methods of treating tetanus, and as protracted cases with recovery become more numerous (as they no doubt will), we shall have more reports of tetanus cases followed by neuritis.

SUMMARY

An Italian, aged 19, developed tetanus about the tenth day following a lacerated wound of the finger. Under treatment by antitoxin, magnesium sulphate and phenol he showed two periods of temporary improvement, finally on the twenty-fifth day ceased to have convulsions, and developed neuritic symptoms in the arms three weeks later, this rapidly developing into general peripheral neuritis. After two weeks he began to improve, and by the fourth week (of his neuritis) had regained sufficient power to walk slightly. Approximately 150,000 units of antitoxin were used, divided nearly equally among the subcutaneous, intravenous and intraspinal routes. The most probable cause of the neuritis was the tetanotoxin.

2. Anders, J. M.: Tetanus, in Osler's Modern Medicine, **1**, 580.
3. Hnatek, J.: Tetanus and Neuritis, Wien. med. Wchnschr., 1905, **55**, 997.
4. Goldscheider: Ztschr. f. klin. Med., 1894.

SPONTANEOUS RUPTURE OF UTERUS FOLLOWING ADMINISTRATION OF PITUITARY SOLUTION

REPORT OF TWO CASES

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Within twelve weeks of each other there have been admitted to the obstetric ward of the Delaware Hospital two patients with spontaneous rupture of the uterus, following the administration of a single dose of pituitary solution. These would seem worthy of more than passing interest since the widespread advocacy of the use of this agent in labor.

These two cases bear a marked resemblance to each other in their salient features: In neither was there any intra-uterine manipulation, attempted version or use of forceps. In neither case had true engagement taken place, but the presenting part was well within the pelvic brim, and otherwise they met the usual indications for the use of pituitary solution. Both patients were multiparas; in both, dilatation of the cervix was complete, the membranes ruptured, the fetus presenting by the vertex, with the uterine contractions weak and inefficient. Each patient received only a single injection of one ampule (1 c.c.). Routine pelvimetry was not carried out, but both pelves were practically normal and the conjugata vera, as estimated at operation, at least 10 cm. in each.

After operation, both babies were found to be somewhat above the average size, one weighing a little above and the other a little below 4,500 gm. (9 9/10 pounds).

REPORT OF CASES

CASE 1.—*History.*—M. W., colored, aged 44, quattuordecipara, whose previous labors had been spontaneous, was admitted to the Delaware Hospital about 7 p. m., Dec. 19, 1916, and the following history obtained from Dr. J. B. Stubbs: The dates of the last menses and of quickening were unknown. Labor was expected about December 1.

Late in the afternoon of December 18, the patient fell into labor, and a midwife was called. The pains were weak and irregular, and much homely stimulation in the form of coffee, whisky, etc., was given throughout the night and following day. About 4:30 p. m., December 19, Dr. Stubbs was called, and found the woman exhausted from her long labor, the pains weak, the abdomen pendulous, the cervix fully dilated, the membranes ruptured, and the vertex presenting and well within the pelvic brim.

He administered hot milk to the patient, placed her in a semirecumbent posture, and injected hypodermically one ampule of pituitary solution. In from five to ten minutes, while holding his hand over the fundus of the uterus, he noted a "sudden giving away": The patient immediately complained of sharp pain in the abdomen and "air hunger." The uterine pains ceased, and cold sweat, ashy color, pinched features and the other signs of shock appeared. Hemorrhage was steady from the vagina but not large in amount. Vaginal examination revealed that the head had receded above the symphysis. The physician gave a diagnosis of rupture of the uterus and advised immediate transfer of the patient to a hospital, but a delay of an hour or more was entailed in obtaining the consent of the family.

Examination.—The findings as given above were confirmed; the patient was taller and heavier than the average, the abdomen was pendulous and relaxed, the fetal head below and riding free in the abdomen above the symphysis, the small parts palpable just beneath the abdominal wall. Fetal movement and heart sounds could not be elicited. Bleeding from the vagina was moderate in amount but

steady, the cervix irregular in outline and flabby, a long anterior lip being palpable just below and posterior to the fetal head. Immediate section was decided on.

Operation.—A low median incision, from 12 to 14 cm., was made. The dead fetus lay just beneath the incision free in the peritoneal cavity. A foot was seized and extraction performed. The placenta, which was still within the uterus, was removed. There was present a large rent in the left broad ligament, extending to and continuous with a tear completely through the uterovesical fold of peritoneum, thus leaving the large anterior lip of the cervix free from all attachments. The vessels of the left side were caught and ligated. After ligation of the infundibulopelvic and round ligaments and the uterine artery on the right, the uterus was freed from its attachments, the attached posterior portion of the cervix incised supravaginally, and the uterus with its adnexa removed. The pelvis was drained below, and the peritoneal toilet completed as is usual. The abdomen was closed in three layers. The patient died about an hour after the completion of the operation.

CASE 2.—*History.*—B. K., aged 26, Austrian, quintipara, whose previous labors had been spontaneous, was admitted to the Delaware Hospital between 10:30 and 11 a. m., March 8, 1917. I was called into this case through the courtesy of my colleague, Dr. Willard Springer, who was in charge of our service at that time. The following history was obtained from Dr. S. M. Zion: The dates of the last menses, of quickening and of expected labor were unknown. According to the history given Dr. Zion by the midwife in attendance, the patient fell into labor about 1 p. m., March 7. Throughout the afternoon and night the pains continued, but were weak and inefficient. At 5 a. m., March 8, he was called, and on examination found the woman having regular but ineffectual pains, the head below, the cervix fully dilated, the membranes ruptured, and the vertex presenting and below the pelvic brim. At 5:20 a. m. he administered hypodermically one ampule of pituitary solution. This was followed promptly by the onset of vigorous uterine contractions, but after a few minutes (three or four pains) there was a sudden cessation of the uterine contractions and the onset of the symptoms of shock; rapid, thready pulse, ashy hue of the skin, anxious, pinched face, sighing respiration and cold sweat. Hemorrhage from the vagina for a while was free, and the head of the fetus was found to have receded above the brim of the pelvis; just in front of the head he noted an irregular mass (the torn anterior lip of the cervix). He called in a consultant (myself), but before my arrival the family called Dr. J. B. Stubbs, who gave a tentative diagnosis of rupture of the uterus and advised immediate transference of the patient to a hospital.

Examination.—The findings as given above were confirmed; the abdomen was large and irregular in outline, the fetal head below and riding free in the abdomen above the symphysis; the small parts were palpable just beneath the abdominal wall. Neither fetal heart sounds nor fetal movements could be elicited. There was slow, steady bleeding from the vagina. A rent in the cervix could be felt extending from the right posterior portion below, upward and to the left into and through the broad ligament of the left side; the head could be palpated through this rent above the symphysis. Immediate operation was decided on.

Operation.—A low median incision, from 12 to 14 cm., was made. The dead fetus was free in the peritoneal cavity just below the incision. A foot was seized and extraction performed. The placenta, which was lying loose within the uterus, was removed. A large tear extended from the contraction ring downward through the lower margin of the cervix and outward through the left broad ligament, involving the uterine artery and vein of the left side and the left infundibulopelvic ligament. Bleeding points were caught and ligated. The uterus with its adnexa was freed and removed supravaginally. The rent in the remaining portion of the cervix was brought together with a running chromic catgut suture, the pelvis drained below, the stumps of torn and severed ligaments sutured to the cervical stump, and all torn and cut surfaces closed over with peritoneum. An inflamed appendix containing three large fecal concretions was removed. The abdomen was closed in three layers and the patient removed to the ward in fair condition.

The external pelvic measurements, taken after operation, were: between spines, 27 cm.; between crests, 29 cm.; between trochanters, 31 cm.; right oblique, 23 cm.; left oblique, 23.5 cm.; external conjugate, 20.5 cm.; circumference of pelvis, 91 cm.

The patient made a comparatively uneventful recovery and was discharged from the hospital on the twenty-first day after operation.

PUBLIC HEALTH INSTRUCTION IN MEDICAL SCHOOLS

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We now take it for granted that public health instruction should be included in the medical curriculum. This assumption, so easily and unanimously acquiesced in today, would not have found sympathetic approval in yesteryears.

Most medical schools have not met their full responsibility with reference to the teaching of hygiene. Only four or five medical schools in this country treat hygiene as a major subject. By a major subject I mean one taught by a well equipped department with a staff on a full-time basis; with adequate facilities for teaching and investigation; with a fair allotment of time in the curriculum, and a required course in which credit must be obtained for the M.D. degree. It must come as a surprise to learn that the only medical schools that meet these requirements in part are Pennsylvania, Yale, Michigan and Harvard.

We must keep clearly before us that the purpose of teaching public health in medical schools is not to make health officers of medical students, but to broaden their training so as to fit them better for the practice of medicine. I am not in sympathy with the views of many teachers of special fields that their particular specialty is the most important in the medical curriculum. Medical schools have a clear-cut purpose, to train men in the fundamental sciences and in the clinical methods that are necessary for success in the responsible service of ministering to the sick. Chemistry is not taught in medical schools with the object of making chemists of the students, for the training of chemists as well as of sanitarians requires long and exacting tutelage in special schools devoted to these particular purposes. On the other hand, while the physician need not be a sanitary expert, he has many sanitary duties to perform, and must understand and be in sympathy with public health work. He cannot meet his obligations or reach his full measure of usefulness without a knowledge of hygiene, preventive medicine or public health, call it what you will.

In this paper I shall limit myself to a discussion of undergraduate instruction in hygiene in medical schools; that is, only to required work in public health leading to the M.D. degree. Special training for a public health career requires special courses and even special schools. The importance of training health officers deserves the recognition which it is getting. Thus, we have the School for Health Officers of Harvard University and the Massachusetts Institute of Technology; we shall soon have the Institute of

Hygiene at Johns Hopkins, which is now in the making. Furthermore, a number of schools offer courses leading to the Doctor of Public Health degree (Dr.P.H.), and to the Certificate in Public Health (C.P.H.), and similar degrees. All this is another story, and should not be confused with our present problem of instruction in public health in medical schools for students who are preparing themselves to be practitioners of medicine.

With this in view, teaching hygiene in medical schools may be considered under several headings: to impart a point of view; to teach facts; the course itself; to cooperate with forces within and without the medical school; to stimulate investigation, and to develop aptitudes.

THE POINT OF VIEW

When a patient consults a physician, he wants to know two things: first, "What is the matter with me?"; second, "What can be done to relieve me?" The successful doctor must therefore be expert in diagnosis and the use of remedial measures. To become and remain a competent diagnostician and a skilled therapeutist requires the same concentration of effort that makes for success in any special field of human endeavor. Many medical schools accept this function of the physician as final, and devote most of their time to the recognition of disease and to the "practical" art of treatment.

The medical student clearly foresees that he must become a specialist in diagnosis and treatment. His clientele expects this, and for this reason some students are overanxious to prepare themselves in a narrow and restricted sense. Medical schools often meet this situation by making the courses as "practical" as possible; but a practical art based on an insecure knowledge of the fundamental sciences reduces a profession to a trade.

The teaching of hygiene may then be used as one of the means to broaden the point of view of the medical school and to widen the horizon of the medical student. The advanced practitioner of medicine is fast adding prevention as one of the necessary tools of his equipment. Hence, the future student of medicine should make a study of health and its maintenance, as well as a study of disease and its relief.

The point of view of the practitioner of medicine is largely personal and particular, while the point of view of the sanitarian is more communal and general. But there is much overlapping and interlocking, for while the community suffers from infections which may be suppressed and avoided by public measures which largely disregard the individual, it is gradually being borne into the consciousness of health officers that one of the most important protections against disease is personal hygiene and individual education. Thus, many communal fevers and infections may be altogether prevented by the use of clean water, safe milk and satisfactory foods. In a modern city the individual cannot possibly get these things for himself, and therefore they should be secured for him. On the other hand, personal hygiene becomes the keynote in the prevention of syphilis, gonorrhea, and to a large degree of tuberculosis and many other infections contracted mainly by direct personal contact. Furthermore, the object of preventive medicine is not alone to control the communicable diseases, nor is it altogether to prolong life but to make life more efficient. Here, again, personal hygiene, education, and the individual rather than the community organization is important. Public health is merely individual health in the aggregate. It is altogether fitting and proper to regard the practitioner of medicine as responsible for individual and family health, which in the mass represents public health. Medical practice can no longer be carried on in cloistered seclusion, for the individual malady must be considered with reference to the common weal. The relation of the individual to the community, both in sickness and in health, is one of the points of view which must be taken into account in the training of a physician.

For a long time the medical profession studied disease only after it had reached the threshold of disabling manifestations. The beginnings of many diseases that do not start sharply are still imperfectly understood. Disease as a terminal condition is still the point of view of the laity. Formerly, people waited until they had toothache before they consulted a dentist. The situation in medicine is precisely the same today. People wait until they are laid low by fever or pain before consulting a physician. For the sake of the patient and for the cause of prevention, lead poisoning must be recognized long before wrist drop, a blue line on the gums and colic make their appearance. Many men in middle life now want physicians to tell them how to delay hardening of the arteries, how to prevent Bright's disease, cancer, diabetes, etc. In medical schools so little emphasis is placed on the causes and beginnings of disease that few physicians have the necessary skill and experience successfully to examine and advise individuals in this situation. Here, again, the medical school in many of its departments must meet a responsibility, or be found wanting. The borderline between health and disease, and the causes which lead up to the derangements of metabolism and the slower degenerative processes are pressing problems. In a way, it is one of the functions of the department of hygiene to stimulate interest in these matters in the medical school.

The young medical practitioner soon will find to his embarrassment that after he has made a diagnosis and written a prescription, he will be asked many questions concerning personal hygiene and the modes of spread of disease; also points regarding sanitation and relations to public health administration which he is expected to know, and which, in fact, he should know, for the practitioner of medicine is the family health officer. The medical profession has in the hollow of its hand the power to carry the message of prevention into the household. Properly qualified practitioners are blessed with the power of immeasurable service in the prevention of much suffering and unnecessary illness. The doctor is constantly asked questions concerning diet, exercise, clothing, rest and ventilation, and he is supposed to be familiar with the laws of heredity and the purposes of eugenics. He should be the friend and adviser of the young concerning sex hygiene and the baneful effects of alcohol. He will be asked by mothers how to guard their children against infections. Busy practitioners of medicine are constantly being consulted, often in private conversation, by legislators and responsible citizens who seek advice on public policies in questions of child welfare, medical inspection of schools, industrial hygiene, vital statistics, or the best forms of health administration. The public welfare often hangs on a casual opinion given offhand by the overworked practitioner. Many doctors have the courage

to say they "do not know" when the question is outside the scope of their special knowledge. There is no reason, however, why all students who are now passing through the medical schools should not be well grounded in the principles of the sanitary sciences and the art of prevention, and I think this is one of the points of view clearly to be kept in mind in public health instruction in medical schools. At one time, the doctor was both priest and healer; he has always been consoler, and now has become teacher.

The social and economic bearing of disease is another point of view which must be considered. The young practitioner of medicine will soon learn to his sorrow that medical science has its limitations, and that life and health itself are often purchasable. He will find, for instance, that after he makes a diagnosis of his first case of tuberculosis, it is easy enough to give medical advice to the patient. Even the laity understands that rest, good food and fresh air are the important factors in the cure of this disease. Two difficulties, however, will at once present themselves: one, how to obtain these things, and the other, what measures to advise the family to carry out with reference to the contagious nature of the disease. Since the communicability of the disease has been recognized, it has become one of the greatest homebreakers of all the diseases. To obtain isolation, however, it is not always necessary to disrupt the family. In order to avoid unnecessary hardships and even to avert family disaster, the practitioner must at least be forewarned and understand the social phase of the situation, as well as the use of expectorants and narcotics. Again, many ailments are brought on, or aggravated, through occupation, and to render full service to his clientele, the practitioner of medicine must have a clear understanding of the occupational diseases, with reference to the needs of his patient.

The relation of the practitioner of medicine to the health department is one of the points of view which must be made clear in the medical school, and this duty falls especially on the department of hygiene. The medical profession is one of the most important links in the sanitary chain. The efficiency of any system of health administration depends on the cooperation of a trained group of skilled physicians, acting independently and collectively. The prompt recognition and reporting of cases of communicable disease are points in question, for the control of infection rests primarily on the ability of the physician to make an early diagnosis and his willingness to notify the registrar at once. Furthermore, the physician must be alive to the importance of announcing doubtful and suspected cases, and must look for mild and abortive cases of disease, as well as carriers, so that proper preventive measures may be instituted. The whole burden of correct morbidity and mortality reports rests ultimately on the medical profession. Every physician should regard himself as an agent of the health department. In return, he utilizes the health department in many of its activities, and the advantages of this relationship should be made clear in the public health course in all medical schools.

It is plain to some that, while a physician's daily duty is to care for sick individuals, his responsibility does not end here, for he must extend his services to the community. Thus, the physician today is not called in solely to treat typhoid fever, but to treat the individual in such a way that the infection will not spread. This is one of the points of view which again and again must be repeated, not only in the course in hygiene, but in other courses in the medical school, for the private physician has in truth become a public official. Physicians are wanted today who are able not only to minister to individuals while they are sick, but also to protect the family and the community.

The teaching of preventive medicine and hygiene in medical schools, then, must be used to broaden the point of view of the practitioner, to emphasize his duty to the profession and the public, and to instil into his mind the fact that he is both private practitioner and public servant; that he must qualify himself to teach the art of hygienic living, and be a leader in the community welfare; that he is teacher as well as consoler; that he must understand the social and economic bearings of disease; that prevention is part of the day's work, and that he must consider the study of health and its maintenance, as well as the study of disease and its cure, and finally that he is ex officio an agent of the department of health.

There are still other special points of view which can be given the student, even in a medical curriculum now so overcrowded that it would seem impossible to add further topics. It will be shown presently, however, that readjustments can be made to meet this situation in a satisfactory manner, and without much extra time, through cooperation with other departments.

TEACHING THE FACTS: THE COURSE ITSELF

Teaching the bare facts is perhaps the simplest, though by no means the easiest, task in a course of hygiene. The fundamental data concerning the modes of spread of the infectious diseases and the means of their prevention which science and experience have demonstrated as most efficient must obviously be included in the course. Special prophylactic measures, such as vaccination, specific inoculations, use of antitoxins and other specific protective measures should be demonstrated and practiced by the students in the course in public health, if not taught in some other department in the medical school. The essential facts concerning venereal prophylaxis and sex hygiene, as well as heredity and eugenics, should be made known to every medical student. The important facts concerning milk and other foods, air and ventilation, water purification, disposal of sewage and wastes, vital statistics, personal hygiene, industrial hygiene, health inspection of schools, disinfection and military hygiene can all be summed up concisely and sufficiently to medical students in a brief course, provided they have a secure background of the medical sciences. The course in hygiene, therefore, must come after the student has learned normal structure and function, and pathologic structure and function, including some bedside acquaintance with disease itself. We now take it for granted that all medical students have some information concerning physics, chemistry and biology before taking up medical work. With proper preparation, the course in hygiene does not require as much time as may be feared by makers of the medical curriculum, nor is it necessary to do more than touch on the high points, leaving exhaustive consideration of each subject to those who desire to specialize in public health work in elective courses or special schools.

At Michigan, Chicago and Harvard the course in hygiene comes in the second year of the medical curriculum, while at Pennsylvania, Yale and Columbia the subject is given in the third year.

The successful teaching of hygiene demands a combination of methods: lectures, demonstrations, quizzes, laboratory exercises, sanitary surveys and excursions. The lectures are perhaps the least important part of the methods of instruction in hygiene, and from forty to fifty hours are a fair allotment of time for this part of the program. Vaughan at Michigan devotes forty-eight hours to lectures and demonstrations; Park at Columbia, fifty hours to lectures and quizzes; Abbott at Pennsylvania, thirty-two hours to quizzing and discussion, and at Harvard I devote thirty-two hours to lectures and demonstrations. In the lectures, the time should be taken up with expounding the broad principles rather than the details of the subject. Hygiene touches elbows with all other subjects, and the subject therefore affords an unusual opportunity to correlate and tie together the varied information with which the student is struggling. In the lectures, also, the different points of view can be explained and opportunity taken to fire the imagination for investigation and to inspire the ideals of prevention.

The backbone of any course in preventive medicine should be the sanitary survey and the laboratory exercises. Every student at Harvard Medical School is required to take the laboratory course and to make a sanitary survey of some city or town. The value of the sanitary survey as a pedagogic instrument has been set forth previously,[1] and need not be repeated here. An outline, which is placed in the hand of each student, gives the general plan and scope of this exercise, as carried out in the Department of Preventive Medicine and Hygiene at Harvard.

SANITARY SURVEY OF A CITY OR TOWN

Each student is required to make a sanitary survey of a city or town, and submit a written report, which should consist of: (*a*) data; (*b*) interpretation of the facts, and (*c*) criticisms and recommendations.

In the crowded medical curriculum, little time can be spared for an exercise of this character. All the students at the Harvard Medical School, however, have in some way found time. A few afternoons during the course are set aside for the purposes of the survey, and we permit students to do this work Saturday afternoons, Sundays and holidays. A certain amount of the work, such as visiting watersheds and dairies, looking up nuisances, etc., is done in the spirit of a walking excursion or a picnic. Some of the best surveys are done during the summer vacation. Some of the reports prepared by medical students are splendid contributions, giving a complete account of the important sanitary and hygienic features of the place studied. Many of the surveys are enlivened with photographs showing good and bad sanitary conditions; most of them have carefully prepared charts showing morbidity and mortality rates, and some of them have a judicious summing up, with a well considered criticism of the defects in the health administration of the town. The sanitary survey has not yet been adopted generally, but sanitary excursions are made at several medical schools.

Another advantage of the sanitary survey is that it adds much interest to the course in hygiene, and helps brighten the laboratory exercises, especially for those students who sense the "practical" point of view. This correlation between the field work and the laboratory work is accomplished in part by requiring students to make chemical and bacteriologic tests of the water supplied the town they are studying. The same applies to samples of milk, air, and other specimens for sanitary analysis.

The laboratory exercises in hygiene should be selected to include fundamental exercises which give a better understanding of the major topics. Thus, each student, in addition to making a chemical and bacteriologic analysis of water and milk, should establish the phenol coefficient of germicides and do a practical exercise in fumigation; he should make a bacterial vaccine, a sanitary analysis of air, etc. The amount and nature of the laboratory work done in the course in hygiene will depend on how much is already accomplished in other courses in the school. At Harvard there are thirty-two hours of required laboratory work in preventive medicine and hygiene. The laboratory exercises in hygiene are elective at Pennsylvania, Yale, Michigan and Chicago. Laboratory work at Columbia consists of thirty hours in the course of applied bacteriology. We therefore see that the medical school should apportion about 100 hours for lectures, demonstrations, laboratory work and field exercises. Furthermore, sanitary excursions should be offered, and visits made to water purification plants, sewage disposal works, boards of health, antitoxin and vaccine laboratories, and other places of sanitary interest. At present these excursions are excursions both in name and in fact at Harvard, and although voluntary and made on Saturday afternoons, they are usually attended by practically the entire class.

COOPERATION

The department of hygiene has unusual opportunities to cooperate with other departments in the medical school and also with extramural agencies. It is quite hopeless to attempt to teach the whole range of hygiene, sanitation, public health and preventive medicine in one course, however long. The professor of hygiene should attempt to induce the professor of physiology to include personal hygiene in his course; the clinical department can be shown that it is profitable to add clinics on industrial diseases; the department of obstetrics should emphasize ophthalmia neonatorum and prenatal work; the department of ophthalmology should dwell on the causes and prevention of preventable blindness; the department of biologic chemistry should consider diet and food poisoning; pediatricians should be willing to devote sufficient time to a thorough discussion of the causes and prevention of infant mortality and child welfare; the department of psychiatry will find it congenial to include mental hygiene and the problem of feeblemindedness; orthopedic surgeons should include posture and the prevention of deformities; the outpatient department should demonstrate social work; the dental school should be called on for oral prophylaxis; the department of bacteriology can well include board of health laboratory methods; pharmacology can include the action of alcohol and the "patent medicine" evil, and so on throughout every course in the medical school. In this way, many of the facts and much of the ideals of prevention can be given medical students from different angles and with different personalities.

One of the most important functions of a department of hygiene is to stimulate interest in the subject of preventive medicine into the work of the other departments of the medical school. This cooperation has been made easy at Harvard through the School

1. Rosenau, M. J.: The Value of a Sanitary Survey in the Teaching of Hygiene, The Journal A. M. A., July 24, 1915, p. 321.

for Health Officers. Many of the members of the medical faculty give special courses in the School for Health Officers, and have shown a willingness to introduce similar exercises expounding the point of view of prevention into their regular medical school courses. Thus, Professor Edsall gives clinics on industrial diseases; Prof. Richard Cabot demonstrates social service work; Prof. W. B. Cannon discusses personal hygiene; Prof. J. L. Morse, infant mortality; Prof. E. E. Southard, mental hygiene; Prof. Reid Hunt, the pharmacology of alcohol and the "patent medicine evil, and Prof. R. W. Lovett, posture and the prevention of deformities. We also enjoy the advantages of cooperation with Professors Strong, Walbach, Ernst, Tyzzer, Mallory, Wright, and other members of the faculty.

No medical school can ever be complete enough to offer facilities to cover the entire field of public health instruction. Cooperation must be established with federal, state and city health departments, and with many philanthropic and semipublic agencies. Milk stations, baby welfare work, antituberculosis societies, psychopathic clinics, institutions for the feebleminded, water and sewage boards, hospitals for contagious diseases, board of health laboratories, quarantine stations, medical inspection of schools, and many other agencies may be utilized with advantage in teaching the subject.

Direct relations should be established especially with the health department, so that the student can see its workings from the inside, and learn at first hand what becomes of birth certificates, death certificates and reports of notifiable diseases, and how the machinery of the department of health operates in the case of nuisances. He should follow the health inspectors on one or two visits, and at least see the diagnostic laboratory, and satisfy himself as to what public health nursing accomplishes. In this way the future physician carries with him throughout his lifetime a keen appreciation of the relations of his work to that of the health department.

In many ways, the department of hygiene has an opportunity to bring the medical school and its work into direct relation with varied activities of the community which may be developed to mutual advantage.

SPIRIT OF RESEARCH

No course in public health can be regarded as satisfactory that teaches the subject with a sense of finality. The student should be left with a clear understanding that some facts seem to be well established, in that they have stood the tests of science and experience. On the other hand, he should be made to realize that a mass of near facts and half truths form the bulk of the subject; and finally, he should be led to the brink of the great unknown and there encouraged to blaze new paths. The imagination of students may often be stimulated by frank presentations of the limitations of our knowledge rather than by attractive and dogmatic expositions. Any course which does not leave in the minds of some students a desire to solve some of its problems has failed to meet its full measure of usefulness. A department of public health must therefore have adequate facilities to offer those students who are fitted by temperament to carry on investigation. These opportunities should be attractively displayed, and the young student, the younger the better, encouraged to try his dreams. The latch string on the laboratory door should hang out. Every class has a few men who will make successful research scholars and can develop the ability to add grains of truth to the sum total of human knowledge. This attitude does not apply alone to the subject of hygiene, for any department of learning in a higher institution which lacks facilities for research will be found wanting. When these facilities are present but not used the situation is pitiful, for there is nothing so contagious as example, and nothing so infectious as enthusiasm.

DEVELOPING APTITUDES

After a boy has made up his mind to study medicine, he has by no means solved his life's problem. The achievements of surgery seem first to appeal to the imagination of most medical students. After the fever to become a surgeon has subsided, medical students begin to think seriously of their career. Medicine probably has more strings to its bow than any other profession. Vocational guidance, therefore, becomes one of the functions of the successful teacher. To discover the inclinations and to develop special aptitudes, in other words, to help young man to find themselves, is one of the satisfying rewards of the teaching profession. Public health work as a career in itself is little understood within and without medical ranks. Every class in the medical school has a few students whose idealism is such that prevention of suffering makes a particular appeal; they at once become happy in the thought that they can have the privilege of consecrating their lives to public health service. The fact that the new profession of sanitation offers uncertain and inadequate material rewards at the present time does not deter those with the pioneer spirit. Such men are endowed with the missionary spirit, and it is not necessary to stimulate souls who dedicate themselves to the ideals of prevention.

Cognizance must be taken of the great changes which are now going on in medical science, medical practice, medical teaching and the relations of medicine to the community life. Adjustments and readjustments are frequently called for. The socializing of practice is marching forward with great strides. It therefore would be a great mistake to provide a rigid or inelastic course in hygiene. Medical schools should be keenly alive to these currents as they ebb back and forth, sometimes with amazing irregularity and rapidity which requires a steady hand and clear eye to pilot the ship *Hygiea* in such uncharted waters. A good pilot will not drift with the tide, but will stear a clear course and reach port, often despite head currents and adverse winds.

Putting It Up to the Legislature.—According to its *Monthly Bulletin* for March, 1917, the Connecticut State Board of Health guarantees to show one life saved for every $500 placed at its disposal. The proposition is that if the legislature grants the $119,000 asked for the board will save 236 lives within the next two years. In doing this, it is said, considerable unnecessary illness will be prevented and a great economic saving will be effected. On the proposition to save 236 lives it is said that if a human life is valued at $1,700 and it costs $500 to save one, the total saving to the state on an investment of $119,000 would be $401,200, or a net profit of $282,200. It is declared that it is the duty of the state to provide for the welfare of its citizens, and that it is also its duty to invest its funds to the best advantage. It is therefore asked whether a guaranteed dividend of 240 per cent. can be ignored.

A METHOD OF TREATMENT OF MERCURIC CHLORID POISONING*

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In recent years, undoubtedly as a result of sensational newspaper notoriety given to one or two cases, the frequency of mercuric chlorid poisoning has greatly increased. Cases of unintentional and suicidal poisoning are continually brought to notice. Naturally, the frequency of these cases has been productive of many studies, chemical, pathologic and therapeutic.

It has long been known that mercury, when introduced into the body, produces characteristic changes. Applied locally, necrosis and sloughing are produced. In the body, practically every organ is affected, the secretory and excretory organs bearing the brunt of the damage. The drug produces a cloudy swelling, leading to fatty degeneration and necrosis, frequently to hemorrhagic inflammation, and occasionally to subsequent calcification. As a part of these changes, an edema of the tissues takes place.

Kahn, Andrews and Anderson,[1] in a chemical and pathologic study of a case of mercury poisoning, have shown that the metal is present in practically every portion of the body; the largest amounts were obtained from liver, intestine, brain and kidneys, respectively.

Burmeister and McNally,[2] in a histologic and chemical study of the renal and hepatic tissue changes, have found mercury in the blood of dogs ten minutes after small doses of mercuric chlorid were introduced into the stomach. In their conclusions, they say:

> In massive intoxication, immediate renal changes vary with the size of the dose. Hepatic changes vary as the duration of the intoxication. In smaller doses, renal changes vary as the duration of the intoxication.

The classical symptoms of mercurial poisoning are: burns, as in the mouth and vagina; stomatitis; nausea; vomiting; oliguria with blood, pus and all forms of casts in the urine, or anuria; anasarca; abdominal distention, and hemorrhages from the mouth, nose, uterus, kidneys and intestine. As the condition progresses, the patient may enter into a state of muttering delirium, convulsions, coma and, finally, death.

In order to know whether or not we are really dealing with a patient poisoned with mercury, it is necessary to determine if mercury has been introduced into the system. This can be determined easily and quickly by the examination of the excretions and secretions.

Vogel and Lee[3] have described a simple method. We have used this method in practically all our determinations. It is said to be so sensitive that the presence of mercury can be detected in the sweat and excreta in the proportion of 1:100,000.

Of the methods suggested for the treatment of mercuric chlorid poisoning, the following are among the most important:

Anderson[4] advises hydraulic irrigation through a cecostomy wound in the effort to hasten elimination through the intestine.

Wilms[5] uses calcium sulphid by mouth and intravenously; he maintains that calcium sulphid is the chemical antidote for mercuric chlorid.

Schisler[6] reports a series of sixteen cases, in eleven of which the patients recovered. He gave from 30 to 60 grains of magnesium oxid every three hours, with plenty of water, if there was no general edema.

Previously, large amounts of water, water restriction, salt restriction, hot packs, hypodermoclysis, and proctoclysis have been used in the effort to overcome the kidney damage.

The most successful report of the treatment of mercurial poisoning is that of Lambert and Patterson,[7] who, in a series of sixteen cases, reported but two deaths.[8] Their treatment is decidedly vigorous, but apparently has been successful. They wash out the stomach twice daily and also give two colonic irrigations daily. They give the patient a liquid diet of 8 ounces of milk every two hours, to be alternated every two hours with 8 ounces of the following mixture: potassium bitartrate, 1 dram; sugar, 1 dram; lactose, ½ ounce; lemon juice, 1 ounce; boiled water, 16 ounces. To supplement this large amount of fluid given by mouth, they give a solution containing 1 ounce of potassium acetate to the pint of water continuously by rectum. The approximate amounts are not mentioned. The patient also receives a daily hot pack.

It is a known fact that patients poisoned with mercury die with all the symptoms of acute nephritis. As Fischer[8] has shown, the evidences we get of acute nephritis are merely an indication of what is going on throughout the body. Just as the kidneys are swollen, so are the other tissues swollen. When we find albumin, casts and blood in the urine, we may be reasonably sure that the other organs have undergone damage similar to the kidneys, that is, severe cloudy swelling. Anuria develops, that is, the kidneys do not pass any water along as a result of the severe cloudy swelling and edema. Then many of the symptoms appear, as nausea, vomiting and headache, probably depending on edema of the brain.

We have used this principle of colloidal swelling, as enunciated by Fischer, as the basis for our treatment. We give alkali, hypertonic salts by mouth, by rectum and intravenously. Freyhof and I have modified the old English potus imperialis.

This modification, which we call "imperial drink," consists of potassium bitartrate, 60 grains; sodium citrate, 30 grains; sugar, 60 grains, with lemon or orange juice to taste, to 8 ounces of water. This makes a pleasant alkaline drink, which is best made by placing the potassium bitartrate and sodium citrate into the lemonade just before it is used. In conjunction with this, we use intravenous injections of Fischer's solution, which consists of sodium carbonate crystals, 10 gm., and sodium chlorid, 15 gm., to 1,000 c.c. of water.

The treatment begins on the arrival of the patient, which is usually within a few hours after the drug has been taken. The stomach is washed with 1 quart of milk and the whites of three eggs, followed by water.

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1. Kahn, M.; Andrews, V. L., and Anderson, J. H.: Med. Rec., New York, 1915, **88**, 357.
2. Burmeister and McNally: Jour. Med. Research, 1917, **36**, 87.
3. Vogel, K. M., and Lee, O. I.: Detection of Mercury in the Excretions, THE JOURNAL A. M. A., Feb. 14, 1914, p. 532; Med. Rec., New York, 1916, **89**, 58.
4. Anderson: Surg., Gynec. and Obst., 1915, **20**, 736.
5. Wilms: Lancet-Clinic, 1915, **114**, 355; ibid., 1916, **115**, 460.
6. Schisler: Jour. Mississippi State Med. Assn., 1917, **14**, 173.
7. Lambert, S. W., and Patterson, H. S.: Poisoning by Mercuric Chlorid and Its Treatment, Arch. Int. Med., November, 1915, p. 865.
8. Fischer, M. H.: Edema and Nephritis, New York, John Wiley & Sons, 1915.

A sample of gastric contents is saved for examination. Before the stomach tube is removed, 3 ounces of magnesium sulphate in 6 ounces of water are introduced and allowed to remain in the stomach. The patient is then given a soapsuds enema. The enema and catharsis rapidly open the gastro-intestinal tract, thereby aiding in the elimination of mercury. If the patient did not vomit immediately after swallowing the poison and did not reach medical aid for at least three hours later an intravenous injection of Fischer's solution is given at once in amount ranging from 1,000 to 1,500 c.c., depending on the condition of the heart of the patient. If there is no evidence of cardiac derangement, 1,500 c.c. of fluid intravenously are readily tolerated without any disturbance. Then the patient receives from six to eight glasses of imperial drink a day, and he is given large quantities of water by mouth. He is allowed a liberal diet — almost anything except an excess of protein foods.

We use the analysis of the urine as the control of the treatment. The patient should void large quantities of urine, as he is taking large amounts of fluid. We endeavor to keep the urine alkaline to a saturated solution of methyl red in alcohol, for Fischer has shown that if the urine of a nephritic cannot be made alkaline to methyl red, this patient continues in a dangerous state. An animal poisoned with mercury is at least a potential, if not an actual, nephritic. Almost all of the patients develop an albuminuria early, but this gradually, or occasionally, rapidly disappears, as soon as sufficient alkali can be introduced into the body to counteract the abnormal amount of acids produced.

We have had complications in only one patient; he developed a severe necrosis of the mucous membrane of both sides of the cheek, and later in the course of the disease he had severe intestinal hemorrhages, in all probability from the colitis produced by the mercury excreted through the bowel. Similar cases were described by Lambert and Patterson.

Up to the present time we can report on fifteen cases personally treated and ten cases similarly treated in other parts of the hospital. The series began in July, 1915, and continues to the present time.[9]

These twenty-five patients were discharged from the hospital, free from any discoverable symptoms of mercurial poisoning. There were no fatalities. The amounts taken by these patients, according to their own statements, varied from 3 to 82 grains of mercuric chlorid, all taken by mouth.

The most serious case was that of a man who took 45 grains. He came to the ward twelve hours later. He had not vomited after taking the tablets. On admission, his stomach was washed, and a soapsuds enema was given. The urine obtained by catheterization was acid to methyl red, and showed a moderate cloud of albumin with granular casts and blood, chemically and microscopically. Twelve and one half ounces of urine were obtained the first day. An intravenous injection of 2,000 c.c. of Fischer's solution was given immediately on admission to the ward.

The patient was urged to swallow as much fluid as he could, but this was very painful, as he had developed a severe mercurial stomatitis. There was a complete suppression of urine for three days following the day of admission. On the third day after admission, he was given 1,800 c.c. of Fischer's solution intravenously. Orthoform powder applied locally diminished the pain of swallowing so that he could take large amounts of milk, water and imperial drink. On the fifth day after admission, the patient voided only 3 ounces of urine, which showed many granular casts and red blood cells, and was strongly acid to methyl red. On the sixth day the patient again voided only 3 ounces. In the meantime, alkali and fluids were pushed by mouth and rectum (Fischer's solution by rectal drip). A slight edema of the ankles developed on the third day; this edema continued to increase so that on the sixth day after admission the patient's face, hands, abdomen and legs were swollen with a soft edema. On the seventh day the patient voided 136 ounces of urine; this urine was alkaline to methyl red, showed a slight cloud of albumin, and scattered granular casts and many red blood cells. Following this large voiding, the patient continued to secrete large amounts of urine, and the edema disappeared. The albuminuria continued for thirty days, after which the urine became normal chemically and microscopically, and remained so until the patient was discharged, fifty-eight days after entering the hospital. On the fourth day after admission, the patient had tarry stools, which continued until the seventeenth day of his illness. The severe course in this case was probably due to the unavoidable delay in instituting the treatment.

The following case is typical of those in which treatment was promptly instituted: A man, after drinking six glasses of beer, and omitting his evening meal, dissolved at least five 7½ grain mercuric chlorid tablets in warm water and drank the solution with suicidal intent. He thinks he vomited about fifteen minutes later. He reached the hospital two and one half hours after taking the poison. His stomach was washed with milk, eggs and warm water, and 10 ounces of saturated solution of magnesium sulphate allowed to remain in the stomach. He vomited a portion of this after several minutes, and more magnesium sulphate was given to him. He was given a simple enema, and, one hour later, an intravenous injection of 1,300 c.c. of Fischer's solution. The urine voided during the night was acid to methyl red and showed no albumin. Later in the day the urine was still acid, and showed albumin, granular and hyaline casts, and blood. Mercury was obtained from the gastric washings and from specimens of stool and urine. The first day he voided 20½ ounces of urine. He was given large amounts of fluid and six glasses of imperial drink a day. The urine remained acid, and showed albumin and casts. He was given a second intravenous injection of 1,200 c.c. of Fischer's solution thirty-six hours after admission, and five hours later the urine was alkaline to methyl red, and no albumin was found. The urine remained clear, and he voided large amounts until he was discharged twenty days after entering the hospital. This man had no complications, such as stomatitis or intestinal hemorrhages, and no disquieting symptoms.

No hard and fast rule can be laid down whether or not to give the intravenous injection, but frequently it can be omitted. If the patient has vomited within fifteen minutes after taking the poison and has taken only about 15 grains, we watch the amount of urine voided and the acidity. If the amount voided is close to normal limits and the urine becomes alkaline on the medication by mouth within the first twelve to twenty-four hours, we may omit the intravenous injec-

9. Since the article was written, we have treated three more patients, one of whom died.

tion of Fischer's solution; but if the urine continues to be acid to methyl red, the intravenous injection must be given without delay, and repeated, if necessary.

Usually the patient's urine becomes alkaline after three or four days, and remains so. The patients are kept under treatment until the urine has been constantly alkaline from ten to twelve days and are then discharged, if no complications have developed.[10]

It will be seen from the description given above that our plan of treatment is not essentially different from that of Lambert and Patterson. As our observations were begun some months before Lambert and Patterson's work appeared, and as we had obtained satisfactory results without the frequent gastric and colonic lavage recommended by them, we have felt justified in omitting it.

Clinical Notes, Suggestions, and New Instruments

TWO CASES OF PERFORATION OF THE NASAL SEPTUM DUE TO THE INHALATION OF ARSENIC TRIOXID

BENJAMIN FRANKLIN DAVIS, PH.D., M.D., CHICAGO

Recently I was consulted by a man, married, aged 35, who said that for the past four or five weeks he had been troubled with stuffiness in his nose and a slight nasal discharge; that for the past two or three weeks he had occasionally noticed a little blood on his handkerchief after blowing his nose, and that for the past week, while applying an ointment to the mucous membrane of his nose with a piece of cotton, he had been able to pass the cotton from one nostril to the other through the septum. He desired confirmation of his diagnosis of a perforation of the septum.

Examination disclosed a hole through the cartilaginous septum, about 1 cm. in diameter, not involving the bony septum. The edges of the hole were everted, hyperemic and edematous, while the raw surfaces presented a blackened worm-eaten appearance. There were no granulations suggestive of healing. The mucous membrane of the nose was moderately hyperemic and mucus laden, but not sufficiently so to prevent nasal breathing. A Wassermann test on the blood was negative. The patient denied venereal disease, and there were no suggestive lesions elsewhere on the body. The patient was a chemist and had been engaged for the preceding six months in making an arsenical preparation which involved the grinding and shoveling of from 20 to 50 pounds of arsenic trioxid daily. He said that a good deal of the work was new, largely experimental, and that he had experienced considerable difficulty in controlling the escape of the arsenical dust and fumes. At first he had been careless, but lately had used every means he could think of to protect himself.[1] He further stated that his only companion in the work also had a perforated septum. This man was under the care of Dr. H. B. Woodard, who kindly permitted me to examine the patient and to obtain blood for a Wassermann test, which was negative. The local condition in the nose was similar to that in the preceding case.

In neither of these patients were there symptoms of gastrointestinal irritation, neuritis, dermatoses, edema of the lower lids or other changes, such as one may see following the ingestion of toxic doses of arsenic. Examination for arsenic of one eighteen hour specimen of urine from one patient (Gutzeit test) was negative.

CAUSATION OF PERFORATIONS OF SEPTUM

Of the noncongenital perforations of the septum, probably the majority which the physician treats are either traumatic or syphilitic; certainly the bulk of the cases can be explained on a congenital, syphilitic or traumatic basis. In addition, some perforations are the result of careless exposure in the industries, and some, idiopathic. Dr. Frank Billings informs me that he has studied a number of cases in which, syphilis, congenital defects and trauma being excluded, it was impossible to assign a definite cause for the lesion. All were associated with atrophic changes in the nasal cavities, sometimes typical of atrophic rhinitis, and it was supposed that whatever the exciting agent may have been, the primary lesion was a vascular one.

Among cases reported from the industries, the only representatives which I have been able to find occurred among employees in bichromate factories and those who were exposed to dust rich in the salts of arsenic.

Perforation of the septum due to exposure to the salts of arsenic—the fumes produce systemic but not local effects—appears to be quite common, but the literature is scanty. Our knowledge of this condition is thus summarized by Kober and Hanson:[2]

> The most characteristic lesion produced on the upper air passages is perforation of the septum of the nose varying in extent from a circular hole ¼ to 1 inch in diameter. Perforation may be complete in a month from the time of commencement of work. The anterior and lower margin of the cartilage and the bones to which they are attached never become involved in the ulcerative process so that deformity is absent, thus distinguishing the condition easily from that due to syphilis. Once the perforation is complete no further inconvenience is felt; not a few of the workers are ignorant of the existence of the condition.

The phase of the subject dealing with the effects of chromium has been summarized by Bamberger[3] and, more recently, by Mitchell.[4] Chrome workers are subject, in addition to the nasal lesions, to peculiar ulcerations of the skin called chrome holes. Mitchell says:

> It is generally recognized that neither in the form of dust nor in solution does the salt attack the unbroken skin. For the production of a chrome hole, it is essential that the skin be previously abraded or injured in some way, however slightly. Given such a surface, irritation is set up by the salt, and a papule or vesicle is formed, followed by a pustule. The resulting ulcer is very characteristic. It is most fitly described as a sluggish ulcer. Its edges are clean-cut, markedly indurated, thickened and undermined, and present a punched-out appearance. Its center is filled with a scab resting on a slough. When the latter is removed, the floor presents a gray, indolent appearance. . . . They are from ⅛ to ¼ inch in diameter, occurring on parts exposed to injury. . . . But the most characteristic lesion associated with the manufacture of bichromate is that found in the septum of the nose, viz., perforation. From this few chrome workers escape. It is always produced by the action of the dust.

According to Bamberger, chrome salts—referring particularly to potassium and sodium bichromate—exert a markedly irritating influence on the nasal mucous membrane. There arises in the nose a marked prickling which causes violent sneezing; then, on the septum, there appears a small ulcer which is followed, painlessly, by perforation. The hole enlarges until the entire cartilaginous septum is destroyed, when the process may heal without involvement of other regions.

Mitchell describes the same stages preceding the perforation as are found in the production of chrome holes, namely, papular or vesicular, pustular and ulcerative. Exposure of the cartilage by the ulceration destroys its blood supply, and therefore necrosis and perforation follow quite rapidly. Six months' employment in a chrome works is liable to lead to perforation of the nasal septum in the bulk of those employed.

The effects of the perforation are negligible. The ulceration ceases when the limits of the cartilaginous septum have been reached and the edges heal over. Bamberger says that

10. A more detailed report, with abstracts of cases and observations on the phenolsulphonephthalein output, will be published elsewhere.

1. In a recent communication, one of the patients writes: "It might add a little interest to say that the use of a rubber respirator was early discontinued on account of the accumulation of condensed moisture in the valve, rendering it inoperative, and the fact that the moisture on the face then reacted with the dust which entered through the valve and caused much irritation. Lamb's wool held in place by a flannel mask fitted to a canvas hood seems to be the most effective guard and at the same time the least objectionable to wear. The moisture does not condense on the face for a long time, and it is light to wear. Much of the dust is kept down by the use of oil, and all mixing is done in a ball mill."

2. Kober, G. M., and Hanson, W. C.: Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., 1916, p. 5.
3. Bamberger: München. med. Wchnschr., 1902, **49**, 2144.
4. Mitchell: Jour. State Med., 1916, **24**, 18.

elderly persons and snuff takers are less liable to perforation of the septum than are the young and those who do not use snuff. Mitchell concludes:

> It remains to be said that nothing that has yet been done has served to diminish the frequency of perforation of the septum. The inconvenience caused by the lesion does not seem to be sufficient to induce men to make trial of such expedients as plugs of cotton wool in their nostrils or, as has been proposed, painting the septum with paraffin. In short, preventive measures resolve themselves into the suppression or removal of dust and fumes, attention to cuts and abrasions, periodic medical supervision and cleanliness.

The lesion in the nasal septum of chrome workers appears to be quite analogous in its development and course to that produced by arsenic trioxid in the two cases described in this report. We have yet to explain the apparently characteristic location of the perforations, that is, in the cartilaginous septum. If the observation that, in chrome workers, cutaneous lesions develop only at the site of previous injury is correct, we may find the explanation for this apparently specific localization in the experience of Rothstein,[5] who relates that he has frequently observed perforations of the cartilaginous septum in tabetics, and that these perforations are always at a part which is easily reached by the finger nail. Rothstein is of the opinion that such perforations frequently follow injury to the mucous membrane due to the habit of picking the nose. With destruction of the mucous membrane there follows necrosis of the underlying cartilage, and perforation. If we apply the foregoing to the bichromate cases and to our arsenic cases, we may construct the following hypothesis as to the probable course of events: Inhalation of the dust irritates the nasal mucosa. This leads the patient to pick the nose; in doing so he produces abrasions on the parts most easily reached, and these abrasions furnish suitable sites for the bichromate or arsenic trioxid to exert their caustic action.

These cases have been reported not only because of their interest clinically, but also because it is believed that physicians should be kept alive to the additional health hazards incident to the recent widespread development of the chemical industries in the United States.

122 South Michigan Avenue.

COMPRESSED OXYGEN FOR MEDICAL PURPOSES

TILDEN ADAMSON, NEW YORK
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On a study of the supplies purchased by the city of New York one is confronted from time to time by the different prices paid for the same or similar articles. This experience is more or less common to all attempts at the standardization of supplies and purchases.

Sometimes a large industrial demand for a product of high purity makes that product available to the medical profession at a much lower cost than has heretofore prevailed. This does not necessarily reduce the cost to the profession if that particular product is purchased through the usual channels of medical supply.

A case in point is that of compressed oxygen for medicinal purposes. The extensive use of the oxyacetylene flame for welding has created a demand for oxygen of high purity. This demand has been filled by oxygen which is either distilled from liquid air or prepared by the electrolysis of aqueous solutions. The gas manufactured by either of these methods contains at least 98 per cent. oxygen. The requirements as to purity for this gas are higher than those of the U. S. Pharmacopeia IX; "not less than 95 per cent." is the Pharmacopeial standard. The chief impurity in technical oxygen is nitrogen to the extent of 2 per cent. in oxygen from liquid air or hydrogen to the extent of 1.5 per cent. in electrolytic oxygen. Both nitrogen and hydrogen are inert gases and are harmless in these quantities as far as the animal organism is concerned. Technical oxygen of high purity is compressed to 1,800 pounds pressure per square inch in steel cylinders which deliver from 100 to 200 cubic feet of gas at room temperature and atmospheric pressure. The electrolytic gas sells at the uniform rate of $1.50 per hundred cubic feet and the oxygen from liquid air at the rate of $1.75 per hundred cubic feet.

In the year 1911 the city of New York paid varying rates from $1.53 to $45 per hundred cubic feet of oxygen for medicinal purposes. At present $5 for 75 gallons is not an unusual retail price, which is equivalent to $50 per hundred cubic feet.

There are two types of containers for medicinal oxygen in general use. For use in the wards, a cylinder from 30 to 36 inches in height and 8 inches in diameter is used. The charging pressure is from 200 to 225 pounds per square inch, and such cylinders will deliver from 75 to 100 gallons or 10 to 12.2 cubic feet, of oxygen at 70 F. and at atmospheric pressure. The city of New York is paying at present $7.50 per hundred cubic feet for oxygen delivered in city owned cylinders of the type just described.

The second type of cylinder is 22 inches in height and 4 inches in diameter, and is conveniently portable. These small cylinders are used in the so-called "pulmotor" apparatus and in rescue and safety helmets. The charging pressure is from 1,500 to 1,800 pounds per square inch, and they deliver from 8 to 12.2 cubic feet of gas at 70 F. and atmospheric pressure. The city of New York is paying $11.25 per hundred cubic feet for oxygen delivered in this type of container, the containers being owned by the city.

It is obvious that considerable saving should be effected by installing suitable apparatus for charging and recharging both types of cylinders in institutions in which oxygen is used in large quantities for medicinal purposes. A small pressure pump, pressure gages and a water level gasometer constitute the necessary equipment for charging the low pressure cylinders from a large high pressure cylinder. In order to charge the small high pressure cylinders from a large one, a special pump costing approximately $210 is necessary. In factories in which oxygen rescue apparatus is in common use, the charging of small high pressure cylinders is done on the spot. There is no reason why the same practice should not be followed in hospitals or other institutions in which the demand is sufficiently large. This would bring the cost of oxygen for medical use down to the uniform price of from $1.50 to $1.75 per hundred cubic feet, exclusive of the time and labor involved.

In order to avoid accidents it is obvious that experience with gases under high pressure and practice with the apparatus should be acquired before attempting to recharge either type of cylinder.

If it is necessary to purchase cylinders, the large low pressure type should be manufactured and tested in conformance with the Interstate Commerce Commission's Specification No. 7, and the small high pressure type should conform to Interstate Commerce Commission Specification No. 3 or No. 3 A.

Following is our tentative specification for compressed oxygen:

THE CITY OF NEW YORK SPECIFICATION FOR COMPRESSED OXYGEN

Quality.—Compressed oxygen shall contain at least 98 per cent. of oxygen by volume. It shall give no coloration when 2 liters are bubbled through a solution of potassium iodid and starch, at the rate of 4 liters of gas per hour.

Number of Tests.—On quantities of 1,000 cubic feet and more, one cylinder shall be selected at random and the contents of this cylinder tested.

Tests Waived.—On quantities less than 1,000 cubic feet, the chemical tests may be waived.

Methods of Test.—All chemical and physical tests shall be made in accordance with the Board of Estimate's standard methods of test.

Delivery.—It shall be delivered in steel cylinders which shall have been manufactured and tested in accordance with the regulation of the Interstate Commerce Commission, and the date of the last test shall be plainly legible. The capacity of the containers shall be certified by a recognized testing laboratory, and the certificates shall be subject to inspection on request.

5. Rothstein, T. C.: Personal communication to the author.

Payment.—Payment shall be made for the number of cubic feet of gas at 70 F. and 760 mm. pressure accepted, at the price bid per cubic foot. The pressure of each cylinder shall be tested immediately on delivery and shall register at least 1,800 pounds per square inch. Cylinders registering less than 1,800 pounds at the time of delivery shall be rejected.

EXPLANATION

NOTE 1.—It is recommended that this specification apply to oxygen for medicinal use. The chemist-in-charge at the General Drug Laboratory shall transfer as occasion demands oxygen purchased under this specification to cylinders suitable for medical use.

NOTE 2.—When oxygen is to be used in laboratories for determinations of heat of combustion or for organic analysis, the following additional requirement shall be made under "Quality":

The gas shall contain no hydrogen or other combustible matter.

A CASE OF MERCURIC CHLORID POISONING, WITH SPECIAL REFERENCE TO THE LAMBERT TREATMENT

GEORGE E. BROWN, M.D., MILES CITY, MONT., AND L. W. BASKETT, M.D., BIG TIMBER, MONT.

This case is reported, not because of its rarity, but to show the effects of treatment in an apparently hopeless case, and to demonstrate the efficacy of this treatment on the kidney function, which was studied by means of the phenolsulphonephthalein test and specific gravity curve.

The treatment described by Lambert and Patterson[1] was so successful that it seems the method of choice. They emphasize: (1) the need of prolonged gastric lavage, since shown essential by the work of Lieb and Goodwin;[2] (2) colonic irrigations; (3) diuretics, in the form of a mixture of potassium bitartrate, sugar and lactose; (4) potassium acetate by proctoclysis, and (5) daily hot packs.

This elimination treatment is controlled by frequent examinations of the stomach and rectal washings for mercury. Vogel and Lee's,[3] test for detection of mercury in the excretions is recommended.

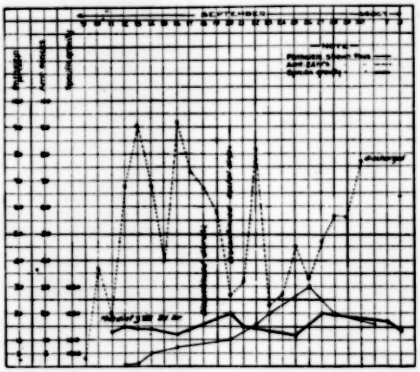

Chart showing effect of treatment of kidney function.

REPORT OF CASE

History.—F. I., woman aged 33, married, first seen by one of us (L. W. B.) 8 miles out of town, with negative family history, had never been strong. She had had five children in eight years, the youngest of whom was 10 months old. The patient finished menstruating, Aug. 31, 1916, and, following her usual custom, inserted an astringent tablet in the vagina. This tablet proved to be a 7½ grain mercuric chlorid tablet, and though it felt uncomfortable, she allowed it to remain. One hour later she felt faint, and became ill with nausea and vomiting. In about one hour vaginal pain became pronounced and diarrhea commenced. The patient was ill all night and was seen by Dr. Baskett at 10 o'clock the following morning. The vagina and the stomach were washed out a number of times. The patient continued ill for five days, with profound nausea and vomiting. The bowels moved from six to twelve times daily with bloody passages. She was seen by Dr. Baskett on the sixth day, and was brought on a stretcher to Miles City in a very critical condition. Close questioning of the patient revealed the fact that she had excreted practically no urine for two days—a few drops at the most.

Examination.—The patient was thin and pale. The pulse was 60, and of low tension. The temperature was 98. The patient was weak; she could scarcely talk or swallow on account of severe stomatitis, with bleeding at the slightest touch; this ulceration extended into the pharynx. The blood pressure was 100, systolic. The red blood cells numbered 4,160,000; the hemoglobin on the Tallqvist scale was 70 per cent. The Wassermann test was negative. The twenty-four hour urine, September 8, 3 ounces; albumin ½ volume; sugar, a trace; pus and blood were present in sediment. The lungs and heart were negative, the abdomen slightly distended. There was no edema of the extremities. On the vaginal mucosa was one large black eschar. There were ulcerative lesions of the tongue, gums and pharynx.

Treatment and Results.—The patient remained under treatment twenty-one days, and after treatment was instituted, her improvement was gradual and constant. At first she was sluggish and lethargic, but this condition improved as urinary excretion was established.

Gastric lavage was given three times a day with large amounts of warm water. One dram of potassium acetate in 1 pint of warm water was given by proctoclysis by the continuous drop method. Every second hour, 8 ounces of the following diuretic mixture were given: potassium bitartrate, 1 dram; sugar, 1 dram; lactose, ½ ounce; lemon juice, 1 ounce; water, 16 ounces. Eight ounces of milk were administered every alternate second hour.

Hot packs were applied twice daily. The colon was washed twice daily with warm water. This was continued until the stomach washings and the urine revealed no trace of mercury.

The diuretic mixture was discontinued the ninth day and the proctoclysis the eleventh day after treatment had been begun. The diet was increased on the fourth day to include cereals. The vagina was packed daily with moist boric acid packing.

Daily urine examinations revealed albumin varying from a trace to 1/10 volume. Sugar was continually present in small amounts. Pus and blood were present in sediment in varying amounts. The stomatitis cleared up slowly under antiseptic mouth washes, but the patient still had taste impairment on the day of discharge.

The effect of treatment is shown strikingly in the curves presented. The specific gravity curve reveals a low specific gravity during the most severe stage of the nephritis, agreeing with Mosenthal, who has shown that there is a marked fixation of the specific gravity at a low level only during the most severe type of nephritis. This also agrees with the studies of Lewis and Rivers. The low specific gravity is maintained in spite of the wide variations of the twenty-four hour quantity. The specific gravity three months later was 1.012.

The phenolsulphonephthalein curve shows the beneficial effect of treatment. The restoration of this phase of kidney function was gradual and constant. Three months later, a normal dye excretion was present, though at this time an increase in blood urea was found, 0.36 gm. per liter. The

1. Lambert, S. W., and Patterson, H. S.: Poisoning by Mercuric Chlorid and Its Treatment, Arch. Int. Med., November, 1915, p. 865.
2. Lieb, C. C., and Goodwin, G. M.: The Excretion of Mercury by the Gastric Mucous Membrane, THE JOURNAL A. M. A., June 19, 1915, p. 2041.
3. Vogel, K. M., and Lee, O. I.: Detection of Mercury in the Excretions, THE JOURNAL A. M. A., Feb. 14, 1914, p. 532.

most noticeable effect of this treatment, however, is shown in the rapid increased flow of urine. Within thirty-six hours from the beginning of treatment the urinary flow had increased from 2 to 3 ounces, in twenty-four hours to 36 ounces in an equal space of time, and by the fourth day had reached 63 ounces in twenty-four hours.

The patient was discharged, Sept. 30, 1916, having been under treatment twenty-four days. Examination of renal function on this date revealed: phenolsulphonephthalein excretion in two hours, 20 per cent.; specific gravity, 1.016; albumin, faint trace; sugar, negative; sediment, few pus cells, many hyaline casts. The patient was quite weak, however, and she was referred to Dr. Baskett for further care. Her improvement was slow but constant.

Dec. 4, 1916, examination revealed: phenolsulphonephthalein excretion in two hours, 60 per cent.; specific gravity of urine, 1.012; albumin, faint trace; sugar, negative; sediment, no casts; few red blood cells; few pus cells; blood urea, 0.36 gm. per liter.

CONCLUSIONS

1. This case illustrates the importance of treatment in this type of poisoning, more particularly the efficacy of the eliminative treatment as outlined by Lambert and Patterson.

2. No case of this kind should be considered hopeless, and vigorous and accurate treatment should be started at once.

3. These are hospital cases, and the Lambert and Patterson treatment cannot be carried out with the best results unless the patients are in a hospital.

4. The importance of gastric and colonic lavage, as shown by Lambert and Patterson, should be emphasized. This treatment should be continued until no mercury can be detected in the excretion fluids.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(*Continued from page 1551*)

CATHETERIZATION OF THE URETERS

If pus or blood in the urine is not positively known to come from the urethra, the source of either one or both must be ascertained, and the diagnosis of the cause will determine the treatment.

As it is not proposed in this discussion of kidney disturbances to describe diseased conditions of the urethra, bladder or the genital adnexa, urethral, bladder, prostate and seminal vesicle tests will be only briefly mentioned. The two and three glass office tests in gonorrhea should be routine. Young's seven glass test, well described by Thomas,[120] should be done from time to time in male cases to determine the source of the pus and what parts of the genito-urinary system are involved. If the case is not one of gonorrhea, then these tests should be carried out immediately as a prelude to more accurate physical examinations. It may also be stated that an organism, apparently a gonococcus under the microscope, does not positively prove that gonorrhea is present unless gonococci can be shown in cultures and unless the so-called complement-fixation test is positive. It should also be noted that the complement-fixation test does not appear until the posterior urethra is infected in the male and the cervix in the female, and then not until the disease has been present four or more weeks. If the test is negative, it does not prove that gonorrhea is not present. The fixation test may be positive weeks after an apparent cure, proving that gonococci probably are present somewhere in the organism.

120. Thomas: Am. Jour. Med. Sc., November, 1913, p. 696.

Whether gonococci have migrated to a joint, a kidney, or to some other region, a gonococcic vaccine injection may give a focal reaction of value in diagnosis. As a cure it is not a great success in acute gonorrhea or in its complications, but it may be of assistance in secondary subacute cases. An autogenous vaccine may be of supplemental value to other treatments.

Microscopic examination of secretion from a massaged prostate, culture examinations of sediment of the excretion (pus, blood, mucus and semen) obtained by an injection into a guinea-pig if tuberculosis is suspected, urethroscopy, cystoscopy, the passage of catheters into each ureter if necessary, roentgenography, pyelography, the tuberculin diagnostic test, and the Wassermann reaction should reveal the origin of pus or blood, or both, in the urine.

It is now possible to shorten the period (about six weeks) of the guinea-pig test of secretion or excretion suspected of being tuberculous. Murphy and Ellis[121] have shown that when white mice are exposed to Roentgen rays they are more susceptible to bovine tuberculosis than the normal animal, and Morton[122] of the Massachusetts General Hospital has shown that the resistance of guinea-pigs to tuberculosis is reduced by Roentgen-ray exposures. Therefore the diagnosis of suspected renal tuberculosis can be ascertained in from eight to ten days by the inoculation of a guinea-pig exposed to Roentgen rays. The application of the Roentgen ray to the guinea-pig for this object may be made in one large dose administered just before or shortly after the animal is inoculated.

The ureters rarely show primary disease, but acquire disease or disability from above (the kidneys), less frequently from below (the bladder), or occasionally from some disease or condition external to them.

It is hardly necessary to express the caution that before the passing of ureteral catheters the bladder should be thoroughly washed, lest infection be carried into the healthy ureter and to a healthy kidney. When the bladder is seriously infected, a ureteral catheter should perhaps not be passed at all unless urgently necessary.

As stated in the discussion on bleeding from the kidney, the term "essential hematuria" should not be applied unless all other causes have been eliminated, and even then surgery may find a tangible pathologic excuse for such bleeding. A previous lesion, followed by a cicatrix, and the formation of varicosities and consequent bleeding are tangible causes of so-called essential hematuria, and cases have recently been described by Payne and MacNider,[123] showing that some such cause may be at the base of many if not of all so-called essential hematurias. Of course there may be hemophilic bleeding from any portion of the genito-urinary tract without previous local disease.

PYELOGRAPHY

While in many cases the usefulness of this method of obtaining roentgenograms cannot be disputed, it should be emphasized that only by the exercise of great care is the method free from danger. It seems essential for safety that the opaque substance, colloidal silver or whatever it may be, should run into the pelvis of the kidney by gravity only and not by any

121. Murphy and Ellis: Jour. Exper. Med., 1914, **20**, 397.
122. Morton: Jour. Exper. Med., 1916, **24**, 419.
123. Payne, R. L., and MacNider, W. B.: The Surgical Problem of Unilateral Symptomless Hematuria, THE JOURNAL A. M. A., Sept. 23, 1916, p. 918.

syringe pressure. If pain occurs, the instilled substance has apparently caused sufficient distention of the pelvis to force the solution into the terminal kidney tubules.

Therefore this ultimatum of scientific roentgenography should not be resorted to unless other simple means of diagnosis have failed. If the renal excretion is shown by various tests to be decidedly insufficient, and if the patient is in a weakened physical condition, pyelography should not be attempted.

The objects of pyelography are: to locate a kidney as to its relation to some tumor; to determine positively the amount of mobility of a kidney (roentgenograms being taken with the patient standing and lying); to accentuate a doubtful roentgenogram of a renal calculus; and to determine accurately the dilatation of a kidney pelvis in hydronephrosis and in pyonephrosis.

While the normal capacity of the pelvis of a kidney is not entirely agreed on by surgeons who specialize in diseases of the kidney, testimony seems to show that any capacity below 30 c.c. (an ounce) may be normal; any capacity above this amount is generally abnormal, and some patients complain of pain after the instillation of 15 c.c. (half an ounce) of liquid. Overdistention of a kidney, whatever the size of the pelvis, and rapid distention will cause pain and may cause shock. A rise of temperature is not infrequent after pyelography. Childs and Spitzer[124] state that it should also be recognized that considerable twisting of the ureter may not be abnormal.

An efficient technic of pyelography can be acquired only by association with some expert in this line of work. It is obvious that the technic can be carried out only in a hospital with proper Roentgen ray equipment. The patient who is to undergo the examination should be physically and renally able to endure it. He should rest for two days before the operation — for it is an operation. During these two days his diet should be rather light, and sufficient purging should be caused to obtain the best picture results. Several opaque silver preparations are used in pyelography. It is not clear that any one is preeminently the best. Collargol has been, perhaps, the most frequently used, but thorium nitrate in 20 per cent. solution has more recently been advocated.[125] Whatever solution is used, it should be entirely evacuated in twenty-four hours. In some cases the silver solution has been found retained in some part of the kidney structure.

(To be continued)

124. Childs, S. B., and Spitzer, W. M.: Roentgenographic Study of the Normal Kidney, Its Pelvis and Ureter, THE JOURNAL A. M. A., Sept. 29, 1913, p. 925.

125. Burns, J. E.: Thorium—A New Agent for Pyelography, THE JOURNAL A. M. A., June 26, 1915, p. 2126; Further Observations on the Use of Thorium in Pyelography, ibid., Feb. 17, 1917, p. 533. Braasch and Mann: Am. Jour. Med. Sc., September, 1916, p. 336.

Inauguration of First Aid Service.—Under John Moore (1826-1907), surgeon-general during 1886-1890, instruction in first aid was inaugurated in the service in 1886. This was one of the most important steps for the welfare of troops, in connection with which the first aid books of Dietz, Smart and Pilcher were published and the Hospital Corps of the United States Army was organized by Act of Congress in 1887, resulting in the drill manuals of Pilcher, Heizmann, Hoff, Havard, Woodhull and Dietz.—Lieut.-Col. C. C. McCulloch, Jr., U. S. Army: The Scientific and Administrative Achievement of the Medical Corps of the United States Army, *The Scientific Monthly.*

Special Article

THE MEDICAL OFFICER OF THE ARMY

VII

ADMINISTRATIVE CONTROL IN TIME OF WAR

In time of war, the activities of the military establishment embrace the service of the interior and the service of the theater of operations. The service of the interior is directly under the secretary of war and the bureau chiefs. In this area, from the medical standpoint, several important functions are included. The general hospitals are situated in this section. They are directly under the surgeon-general, and their medical administration is handled by his office. These general hospitals are similar to civil hospitals, in that they use buildings, giving them a permanent status, and the character of the cases treated is similar to those encountered in civil life. Here are chronic diseases, permanent or semipermanent crippling from wounds, and all cases which will require long treatment for the recovery of the patients. If a large number of these hospitals are required, undoubtedly many civil institutions will be used for the purpose.

The physical examination of recruits of all kinds is carried out in this area. This particular work, as may be imagined, will be extensive when the new conscript army is brought into being. The medical service of the concentration camps, and the organization and training of new ambulance and field hospital companies will take place in this territory, and the administration will be directly under the War Department at Washington.

THEATER OF OPERATIONS

The service of the theater of operations comprises all that territory covered by the actual movement of the troops in the field. This service is directly and entirely controlled by the commander of the armies in the field, and his chief surgeon has direct administrative control over the sanitary troops in this army.

SUPPLY AND OTHER TRAINS

The most important administrative departments for the army in the field are those which are concerned with the supply of this army. With the division are the following supply trains: the combat train, field trains, ammunition trains, sanitary trains, supply trains and engineer trains.

The combat train consists of a certain number of wagons attached to each regiment which follow directly after this regiment on the march. They carry only ammunition, entrenching tools and reserve medical supplies. When an engagement is imminent, this ammunition and the other supplies are issued to the command, and the empty wagons go to the rear to be refilled. The pack mule which is assigned to each regiment for the transportation of sanitary supplies is attached to this train.

The field trains carry the baggage and rations of the regiment; on the march, however, they do not follow the regiment, but are back in the rear with the trains. When camp is reached, these wagons return to the regiment so as to provide for the proper distribution of rations and other supplies.

In the column of trains, the supply trains follow usually directly after the sanitary trains. The latter have been treated in a previous article, so will not be

considered here. The supply trains carry extra forage and rations for the division so that a sufficient supply can be kept on hand at all times.

The engineer trains carry the pontoon and pioneer equipment of the engineer corps. The ammunition train, which always heads the column of trains, carries the reserve ammunition for the division.

When on the march these trains are under command of an officer detailed as commander of trains, and he has complete control over them. When their services are needed, or an engagement is imminent, the sanitary trains are immediately released from his command and placed directly under the division surgeon.

When the field trains are emptied, they proceed to a point designated in orders called the refilling point, and there are refilled from the supply train, and in turn the supply train is sent back to the head of the line of communications, which is called the distributing point, to be supplied. This method of handling these trains prevents the field trains from ever becoming greatly separated from their regiments.

The medical supplies needed for the division are brought up on the supply trains in the same way that forage and rations are handled, and when brought to the refilling point are turned over to the sanitary units which carry the reserve sanitary supplies for the division.

The source of these supplies is not always the base, but the country through which the army is advancing is required to furnish a certain amount of necessary supplies to the troops. This is called supply by requisition. This is of interest from a medical standpoint, in that all obtainable sanitary supplies are also requisitioned from this territory.

LINE OF COMMUNICATIONS

The line of communications is, of course, under command of the commander of the line of communications; but the length of this territory is such that he cannot control it without proper assistance. To provide for a more efficient administrative control, the area is divided into two sections, the base section and the advance section. Each of these sections is handled by an assistant chief of staff, who represents the commander of the line of communications in that section.

The handling of sanitary supplies and the evacuation of the sick and wounded are in the hands of a medical officer assigned to each of these sections. The official titles of these officers are surgeon of the advance section of the line of communications, and surgeon of the base section of the line of communications. The surgeon of the base section of the line of communications is also the technical adviser on the staff of the commander of the line of communications. Sanitary supplies are pushed forward, and the sick and wounded are evacuated to the rear directly under the control of these officers, and they are responsible for the efficient handling of this service. Failure in performing their duties in a proper manner could not be tolerated for one moment. The actual existence of the army depends on the efficient handling of the supply and sanitary service, and the general public never realizes how much depends on the work of these officers, working without hope of glory or reward.

HOSPITAL TRAINS

The service of military railroads which handles hospital trains, though under the commander of the line of communications, is directly controlled by the director of military railroads, who is an engineer officer detailed for the purpose, and all movements of hospital trains are carried out under his immediate orders. These trains run on regular schedules, and officers who may be placed in charge of such trains should remember that it is extremely important that the schedules laid down should be followed carefully and delays in entraining and detraining cannot be tolerated.

MILITARY POLICE

Another department of the military service which is of interest to the medical officer is the military police. This is composed of officers and soldiers detailed for the purpose, and has complete control of the territory immediately in the rear of the fighting line. Its function, in addition to regular police work, is to gather in stragglers and take care of prisoners of war. The medical department is interested in this service, for malingerers in the stream of wounded coming from the front, and all wounded prisoners of war, are ultimately turned over to the military police.

THE GENEVA CONVENTION

In the back of the "Field Service Regulations" are a number of appendixes. The one that concerns the medical officer is that which gives the text of the Geneva Convention.

[NOTE.—This concludes this series of articles. They will be reprinted in pamphlet form slightly modified and extended. The pamphlet will also include "The Medical Corps of the Army as a Career," by Major Robert E. Noble; Instructions to Officers of the Medical Reserve Corps, concerning procedure when called to active duty, and the text of the Geneva Convention.]

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

KEPHALIN-ARMOUR.—The hemostatic phosphatid obtained from spinal cord and brain tissue. It is essentially the same as Brain Lipoid (New and Nonofficial Remedies, 1917, p. 125).

Action and Uses.—See New and Nonofficial Remedies, 1917, p. 124, under "Fibrin Ferments and Thromboplastic Substances (Kephalin)."

Dosage.—0.1 to 0.2 per cent. suspensions of kephalin-Armour in sterile physiologic sodium chloride solution is applied freely to bleeding or oozing surfaces.

Manufactured by Armour and Company, Chicago.—No U. S. patent or trademark.

The brain and spinal cord of mammals is desiccated in vacuo and the crude phosphatids extracted by means of petroleum ether. This liquid is concentrated and then precipitated with an excess of acetone. The precipitate is extracted with acetone and then with alcohol. The residue is dried and dissolved in ether and the ether solution evaporated to dryness at a low temperature.

Kephalin-Armour is an amorphous, yellowish substance of characteristic odor and taste. It is readily soluble in ether and chloroform, slightly soluble in alcohol and insoluble in acetone. In neutral aqueous solution it forms an opalescent emulsion. The blood clotting properties of kephalin-Armour are not destroyed by boiling aqueous suspensions of it.

One part kephalin-Armour will coagulate 1000 parts oxalated blood plasma in from one to two minutes when tested as follows: 1 Cc. of a 5 per cent. solution of kephalin-Armour in ether is added to 25 Cc. of physiological sodium chloride solution and the mixture shaken until a uniform suspension results. 5 Cc. of this suspension is mixed in a large test tube with an equal volume of blood serum. Ten Cc. of oxalated blood plasma (1 Gm. sodium oxalate in 100 Cc. water added to 900 Cc. fresh blood) are then added and mixed by inverting the test tube twice. The mixture is rapidly transferred to a shallow porcelain dish: it should curdle in from one to two minutes. All solutions used in the preceding test should be made freshly and the temperature of the liquids and the porcelain dish should be maintained at 38 C.

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SATURDAY, JUNE 2, 1917

THE DUTY OF THE MEDICAL PROFESSION IN THIS WAR

This is the most destructive war the world has ever experienced. Indeed, it is more than a war. It is a cataclysm in the progress of civilization. In its effects on man it is comparable to the great geologic epochs which have endangered the existence of the race and profoundly modified the development of civilization. Whatever may be the results of this titanic struggle, the trend of man's evolution must be profoundly altered. Ultimately, it may result in benefit to the race; or it may lead to deterioration. Our success, with that of our allies, is essential to the welfare of the world. Defeat would mean not only disaster to ourselves, but the retrogression of all nations. We are fighting to protect our nation against a ruthless aggressor; to aid England, France and Italy, whose ideals are in harmony with our own and who up to the present have been fighting our battles; to restore desolated and ravished Belgium and Serbia; to assist Russia in her struggle for liberty, and to give freedom to the great masses of the German people themselves. The cry for help that comes to us from our allies should cause us to respond with our greatest effort, directed by our highest intelligence, and stimulated by our most unselfish desires.

In this great struggle the medical profession has a part to play second to that of no other group of men. The medical profession has had its peculiar duties and obligations in all wars, but especially in this war. The medical service is the branch of the army whose functions are concerned almost solely with the amelioration of the horrors of war. Our European confrères have shown themselves worthy by their ready enlistments, by their high skill and intelligence and by their altruistic devotion. The high rate of medical corps fatalities testifies to this. Practically every physician in France is in the army, either with the combatants or on detail to take care of civilians; but in either case he is absolutely at the command of the military authorities. There are today practically no private practitioners in France. Every medical man is subject to order, and is working not in his own interest, but in the service of the state. In England the profession has been so reduced that at present there is only one practitioner for every 4,000 population in densely peopled districts, and one to 2,500 in the more sparsely occupied areas, and even these are now subject to call.[1] There the organized profession itself has sole charge of supplying the army with medical officers. This has been, and is still, being done without the necessity of a draft among physicians, except the draft which is exercised by the profession itself. Let there be no slackers among us!

Let there be no slackers! But, also, let there be none to offer themselves, provisionally, asking that they be favored in this, that or the other way. In promoting to higher ranks, the Surgeon General undoubtedly will avail himself of the best information concerning each man's fitness, and in assignment to duty the same care will be exercised. An internist will not be assigned to operative work, nor will a sanitarian be expected to take the place of an ophthalmologist. Individual preference and special fitness, we may rest assured, will receive full consideration in all cases. But it must be remembered that the exigencies of the situation may demand, at times, that the medical officer sacrifice his personal and professional pride and do a service which he may consider a drudgery. This sacrifice he should be willing to make for his profession's honor and for his country's good.

A few prominent men have expressed great disinclination to be assigned to the physical examination of recruits. Yet no more important function falls to the lot of the medical officer than this work. Every physically unfit man in the enlisted ranks is not only a dead weight to be carried for the present, but also a potential burden on the pension lists to be borne in the future. So far as possible, the final examination of enlisted men in the concentration camps will be made not by individual medical officers, but by boards of experts. On these boards there should be men skilled in the recognition of surgical, circulatory, genitourinary, dermatologic, pulmonary, neurologic, ophthalmologic and otologic defects. If an army of 1,000,000 men is to be assembled, two or three times this number may need to be examined. These examinations must be carefully, scientifically and conscientiously made. No greater honor and no greater responsibility can come to a medical man, eminent in any of the specialties, than to be placed on such a board. No such opportunity—rich in material from among our diversified population, important to the success of our cause, valuable from a scientific point of view, worthy of the

4. Draft of Physicians in England, THE JOURNAL A. M. A., May 19, 1917, p. 1483; Compulsory Mobilization of the English Medical Profession, p. 1486.

high skill of the specialist—is likely to come again to the medical profession.

The war in Europe has wrought great havoc; it has destroyed millions of lives, has maimed and crippled many men, has littered the fields with shells of destruction, dismantled cities, and crumbled into dust some of the most stately edifices, both secular and religious, ever conceived in the brain of man or reared by his hands. Civilization is not to be lost, and the upward progress of the race is not to be permanently arrested. The potent saving factor in this great catastrophe is scientific medicine. Had disease followed these great armies in like proportion as it accompanied smaller armies in the past, the better part of civilization might have been lost. But in all the belligerent countries medical science has stayed the pestilence and coped successfully with typhoid, typhus, plague, cholera and other infections which in the past often wrought greater havoc than war and determined the fate of nations. The obligation has come to us. Let us lay aside our individual interests, forget our personal desires and professional ambitions, and with one accord proceed in the execution of the duty that lies before us.

LIMITATIONS OF THE WHITE BEAN AS A DIETARY COMPONENT

Although legumes of various sorts have been familiar food products from early times, they have never formed the prominent staple of the dietary of large groups of people in the same sense that wheat or rice or other cereals have long been the "backbone" and chief ingredient of the ration of great masses in different parts of the world. At the present time, however, when all available sources of nutriment are being carefully taken into account and when the item of comparative cost is directing attention to every possibility in the way of food sources, the relatively low priced legumes, such as beans, are receiving serious consideration as an efficient supply of valuable nutrients.

The legumes, as peas, beans and lentils, are characterized by being decidedly richer in protein than are other vegetables. Moreover, they are easily preserved dry, a state in which they are of apparently greater fuel value than meats, judging by proximate analysis alone. Legumes in the green state are generally regarded as more readily digestible than the dried products. Although dried beans, for example, bear the reputation of being undesirable as a prominent component of the daily diet, such impressions receive scant consideration in times of stress from many of our food dictators.

Actual digestion trials on man are not wanting in the case of beans. When beans have formed about one quarter of the ration, the utilization of the protein has been estimated in American experiments at less than 80 per cent., a figure decidedly lower than that obtained for the proteins of meat, eggs or milk. In Oshima's[1] compilation of Japanese investigations, an average digestibility of 65 per cent. is reported for beans. These legumes contain celluloses and hemicelluloses, carbohydrates which are entirely or for the most part indigestible. To the interfering presence of these components the lowered digestibility of white beans has usually been ascribed. Mendel and Fine,[2] who have made extensive studies in this field, have pointed out that the unfavorable results can be explained in part only on the basis just referred to. Isolated bean protein, free from the supposedly interfering cellular detritus, does not appear to be satisfactorily utilized in the alimentary tract; and in feeding experiments by Osborne and Mendel[3] with purified phaseolin, the chief protein of the bean, the nutritive results were highly unsatisfactory when this product formed the sole source of the nitrogenous part of the diet.

An important contribution to the problem of the biologic value of the white bean of commerce has just been made from the laboratory of agricultural chemistry at the University of Wisconsin by McCollum, Simmonds and Pitz.[4] Experiments on rats, the best guide as to what may be expected in respect to the nutrient possibilities of a ration, have shown that caution is necessary in advising an extensive use of beans to supplant other protein rich foods in the diet. The Wisconsin investigators remind us that the hasty substitution of legumes as a class for the apparently more expensive sources of protein, meat, milk and eggs, may be misleading. Modern investigations of proteins by chemical and biologic methods have made it clear that from the dietetic standpoint the term "protein" cannot be loosely employed as it was formerly. "Protein is of biologic value only in so far as it yields appropriate proportions of essential amino-acids."

Some of the facts bearing on the problem are illuminating. When the protein of the ration was derived solely from beans there was a high mortality among animals thus fed, and pronounced stunting was observed in all. Small supplements of acknowledged superior proteins like the casein of milk may bring some improvement; but a high content of beans in the diet appears to exert an injurious effect in any event. McCollum, Simmonds and Pitz have provisionally adopted the view that their subjects were mechanically injured by the distention of the digestive tract, due

1. Oshima, K.: Bull. 159, U. S. Dept. Agric., Office Experiment Stations, 1905.
2. Mendel, L. B., and Fine, M. S.: Studies in Nutrition, IV. The Utilization of the Proteins of the Legumes, Jour. Biol. Chem., 1911-1912, **10**, 433.
3. Osborne, T. B., and Mendel, L. B.: Beobachtungen über Wachstum bei Fütterungsversuchen mit isolierten Nahrungssubstanzen, Ztschr. f. physiol. Chem., 1912, **80**, 307.
4. McCollum, E. V.; Simmonds, N., and Pitz, W.: The Dietary Deficiencies of the White Bean, Phaseolus Vulgaris, Jour. Biol. Chem., 1917, **29**, 521.

to the extent of fermentation processes after eating liberally of beans. The latter contain much carbohydrate of the class of the hemicelluloses, for the digestion of which the higher animals have no provision. These hemicelluloses are, however, readily attacked by micro-organisms inhabiting the digestive tract, and their fermentative decomposition is accompanied by the liberation of a great deal of gas. That this is largely responsible for the injurious effects following high bean feeding is supported by the marked tympanites observed regularly in experimental animals eating rations high in beans. It is further suggested by the Wisconsin investigators that partial asphyxiation of the walls of the intestinal tract through interference with circulation caused by excessive stretching is the principal factor in debilitating the animals, but the low quality of the proteins is a contributing factor.

Another disadvantage of the white bean lies in its content of inorganic salts, which does not support growth. Additions are essential to make it suitable. These can be secured by the appropriate use of other foods; but in such matters expert advice is necessary when the ingredients of the diet are somewhat restricted as to variety. One advantageous feature of the white bean deserves special mention. It is rich in the as yet unidentified water-soluble vitamin that plays an important part in nutrition, although it is quite as deficient as are the cereal grains in the fat-soluble vitamin so prominent in butter fat and so useful in promoting growth.

It will be recalled that those who support the dietary theory of the origin of pellagra urge the inclusion of fresh animal foods and leguminous products in the diets intended to prevent the genesis or recurrence of the disease. Until more information is forthcoming, caution in the extensive use of white bean protein is advisable. Thoroughly cooked beans may act as a very desirable source of water-soluble vitamin despite their shortcomings on the protein side. Many natural foods contain this, however. We agree with McCollum and others that "the evidence at present available points to the conclusion that the bean proteins are decidedly inferior to those of meat, milk, eggs, and the cereal grains which have thus far been carefully studied, viz., wheat, maize, oat, and rice kernels." On the other hand, it would be an unjustified generalization to put all legumes in the same category and under the same ban as the white bean. Peas, peanuts, soy beans and other legumes deserve to be tested with equal care. The chief occasion for extreme caution lies in the possible dangers. Inclusion of undue amounts of beans in the rations of persons restricted to what is supplied to them, as in the case of armies, navies, prisons, asylums, etc., needs to be carefully considered by those who understand some of the facts which have just been rehearsed, and who have the confidence and courage to act in accordance with the lessons of science.

THE CLASSIFICATION OF STREPTOCOCCI

The important rôle that streptococci play in a large number of acute infectious processes has made the classification of the various strains of this group of micro-organisms a problem of great consequence from the standpoint of the clinician. An examination of the morphologic, cultural and biologic peculiarities of races of streptococci from different sources indicates that differences exist between certain strains, but it is difficult to determine the significance of these variations. In spite of exhaustive studies by a large number of investigators, little progress has yet been made toward the development of a practical basis for differentiation. It seems that instead of attempting to simplify and standardize the various proposed methods now in use, there has been a tendency to develop a great number of complicated technical classifications which may have confused rather than clarified the problem. Perhaps the most important contribution to our knowledge of the streptococcus group from the standpoint of the classification of the different strains was made in 1903 by Schottmüller, who introduced the blood agar plate method of culture. By the use of blood agar plates two distinct types of streptococci were differentiated on the basis of characteristic metabolic functions — hemolytic streptococci, which produce active hemolysis but no methemoglobin, and green-producing streptococci, which convert oxyhemoglobin to methemoglobin without causing appreciable hemolysis. Schottmüller called these types *Streptococcus longus pathogenes seu erysipelatos*, and *Streptococcus mitior seu viridans*, respectively. Subsequent investigators have confirmed and extended Schottmüller's work, and it has been observed that these two classes of streptococci usually give rise to different types of infections. The blood agar plate has become indispensable in the study of streptococcus infections, but the lack of standardization of this method still hampers its usefulness to some extent.

Another means of differentiation of streptococci that has gained sufficient prominence to become a routine procedure is based on the fermentation reactions of the different strains. Gordon, Hiss, Andrewes and Horder, and many others have attempted to classify streptococci on this basis, but the existence of numerous variable and anomalous strains, and the use of a diversity of methods have interfered with the establishment of definite types. Recently, however, Holman[1] and Blake[2] have suggested a combination of this procedure with the blood agar plate method, and their results are more encouraging. This is especially true of Blake's work, for his classification is more practical since he advocates besides blood agar the use of only two fermentable substances — lactose and

1. Holman, W. L.: The Classification of Streptococci, Jour. Med. Research, 1917, **34**, 377.
2. Blake, F. G.: The Classification of Streptococci, Jour. Med. Research, 1916, **36**, 99.

mannite. But standardized laboratory procedures for the differentiation of streptococci on the basis of fermentative reactions must be introduced generally before this method can be of help in the clinical study of pathologic conditions in man caused by streptococci.

To be of clinical value, a method of differentiation of varieties of bacteria must yield concrete information as to the source of the organism, and the type of pathologic process with which it is associated. On the other hand, such a method must not demand highly expert laboratory skill; a limitation of cultural tests as well as avoidance of complex classification are necessary. At this time a standard blood agar plate method such as recommended by Becker,[3] Holman, Blake or others is the only approach to a method that in any way fulfils these requirements so far as streptococci are concerned. As stated, the two types of streptococci thus differentiated have definite and characteristic metabolic functions. Furthermore, they differ in pathogenic properties — the hemolytic type usually being parasitic and highly virulent, while the green-producing type is often saphrophytic or of relatively low virulence, at least when judged by the time required for certain infections to reach a fatal end. Hence, the blood agar plate culture in streptococcus infections may yield valuable information. There still remains the hope that a differentiation of streptococci on the basis of their immunity reactions, similar to that developed for pneumococci and other organisms, may be accomplished. There is convincing evidence already at hand which indicates that the antigenic properties of the hemolytic and green-producing streptococci are quite different, a fact that should encourage intensive study along these lines. In the study of the immunologic differences of races of streptococci, refinement in the preparation of antigens might be of great help.

THE ORIGIN OF RED BLOOD CORPUSCLES

According to a current dictum in histology, the mammalian red blood corpuscle is a cell which has lost its nucleus. At an early period in fetal life the blood-forming function appears to be associated with the fetal liver. In the "blood islands" of this organ, nucleated erythroblasts are believed to be formed rapidly by karyokinesis. The primitive spleen also assumes a small portion of the hematopoietic function, which, however, does not appear to persist in these organs much beyond the term of intra-uterine life.

With the appearance of the red marrow of bone, the work of blood formation is transferred in increasing measure to it. Here this activity seems to be continued throughout adult life, being much accelerated after hemorrhages and in certain pathologic conditions. It is generally stated that in their primitive condition all red blood cells are nucleated — erythroblasts, of a biconvex rather than a biconcave shape. Groups of such nucleated, colorless erythroblasts are found in the red marrow. These cells, according to the textbooks, multiply by karyokinesis, and the daughter cells eventually produce hemoglobin in their cytoplasm, thus forming nucleated red corpuscles. Subsequently, according to the present conception, the nuclei of these cells are lost and the newly formed non-nucleated red corpuscles are forced into the blood stream. In fetal life, and in certain pathologic conditions in which blood formation is greatly accelerated, the process is said to occur with sufficient rapidity to permit the immature erythroblasts to gain entrance into the general circulation. The red blood cells of the earliest fetal circulation are, therefore, all nucleated; those of later fetal life are nucleated in decreasing proportion; while in healthy extra-uterine life only mature non-nucleated forms ordinarily occur in the general blood stream.

It remains to inquire how, on this hypothesis, the nuclei disappear from the cells as described. Some regard the process of disappearance as an extrusion; others as a disintegration or solution. In attempting to observe the different stages of the development of the normoblasts into a true red corpuscle by means of a living culture of red bone marrow, Tower and Herm[1] have been led to question the validity of the current descriptions. Instead of witnessing a normoblast remodeled into a non-nucleated corpuscle by losing its nucleus, they saw this normoblast send out non-nucleated straw-colored bladders from its nucleus, these bladders finally separating off as true red corpuscles. This process was not confined to the normoblast type, but was evident in the lymphocyte series of white cells. Moreover, observations show that the normoblasts in the mammal (cat) and the red corpuscles in the bird (chick) arise from white cells by an intranuclear activity, and at the time when they first emerge from the parent cell they are almost indistinguishable from each other.

The novelty in these studies may be thus summarized: The mammalian red blood corpuscle is a nuclear bud which escapes into the circulation as the true red cell. The mammalian normoblast and the red corpuscle of the bird are the product of intranuclear activity and are phylogenetically identical. Phagocytosis of red cells by the giant cells (megakaryocytes) in normal blood-forming tissues is by no means common. The true process is undoubtedly the manufacture and not the destruction of red cells. When it is recalled that a continual disintegration of a certain proportion of red corpuscles in the blood stream is today postulated as an essential factor in the production of bile pigments, it follows as an inevitable consequence that new erythrocytes must also be forming continually. The investigation of a process thus

3. Becker, W. C.: The Necessity of a Standard Blood-Agar Plate for the Determination of Hemolysis by Streptococci, Jour. Infect. Dis., 1916, **19**, 754.

1. Tower, R. W., and Herm, C. F.: The Intranuclear Origin of the Mammalian Red Blood Corpuscles Observed in Living Cultures, Proc. Soc. Exper. Biol. and Med., 1916, **14**, 51.

prominent is fundamental to any adequate conception of hematopoiesis. That a new method of study has raised new problems in regard to the process under investigation is characteristic of progress in scientific research.

EPIDEMIC MENINGITIS

Epidemic meningitis is spread in the same way as diphtheria — by contact with the sick and with carriers, meningococcus carriers. As pointed out a week ago, the meningococcus carrier is of far greater importance in spreading meningitis than sick patients. In the case of diphtheria it is the rule everywhere that proper preventive measures are enforced to control diphtheria carriers until they are free from bacilli. Similar measures should be enforced in the case of epidemic meningitis, not only in the case of troops or in camps, but also in civil communities.

Meningitis is a fearfully destructive disease, and no step that tends to limit its spread should be omitted. Wherever epidemic meningitis appears, the patient and carriers should be segregated immediately! In the treatment of epidemic meningitis the immediate intraspinal injection of specific meningitis serum is absolutely indispensable. Such injections, preceded in each case by the withdrawal of the cerebrospinal exudate, should be continued daily, or practically daily, until the condition of the patient no longer requires specific treatment. English observers (Foster and Gaskell) lay great stress on the value of frequent removal of the cerebrospinal exudate even when the serum is not injected; but whenever serum believed to be reliable is available, it is not doing the most we can in the situation to omit its intraspinal injection. Unfortunately, as shown by experiments in England, some of the serum as obtained under market conditions seems to be without sufficient virtue to have any curative effect. In this respect we still are at the mercy of the manufacturers, unless fortunate enough to be able to secure the serum from institutes for research, such as the Rockefeller Institute for Medical Research or the research laboratories of the board of health of New York City. There has been, and is still, urgent need for efficient methods of standardization of antimeningococcus serum.

When recruiting on a large scale begins, it may be advisable, in view of the wide spread of epidemic meningitis at present, to search for and segregate carriers among new recruits, especially those coming from districts where meningitis is prevalent. This work, if done as it should be, will require specially trained men. In addition to the training given at the Army and Navy Medical Schools, the Rockefeller Institute has arranged to give intensive training to medical officers in this work and offers to the government experienced members of its staff who will undertake the work in the field. Other institutions of research have made similar offers.

It cannot be too strongly emphasized that the bringing together of large bodies of men from various parts of the country involves the serious menace of the development of this disease. The disease can be prevented, provided the right measures are adopted. Such measures include a careful survey of the localities from which the men come, as to the prevalence in those localities of epidemic meningitis; a systematic search for carriers; the retention of all carriers until free from meningococci; early diagnosis and immediate isolation of patients with repeated intraspinal injections of serum, including withdrawal of the exudate.[1]

Current Comment

THE BASE HOSPITAL UNIT

After war was declared the first call on this country by its allies was for medical officers. We were prepared to, and did, respond; and we were able to do this simply and solely because we had the base hospitals organized, equipped and ready to respond. In a word, because this new idea of preparedness had been carried out, we were prepared to respond to this emergency call; otherwise we should not have been. The idea of forming these base hospitals was original in this country and has been carried out nowhere else. In October, 1915, Dr. George W. Crile suggested and thoroughly outlined the whole general scheme of organization. This received the instant approval of the American National Red Cross, through Col. Jefferson R. Kean. The idea was taken up with enthusiasm, and in many cities in which there were institutions that could further the proposition the foundation of these base hospitals was undertaken. There were seven in the course of enrolment in May, 1916, with two others prospective. By May, 1917 — one year later — there were available for use by the United States Army thirty-eight base hospital units practically equipped and ready with brief training for active duty. At the present time four of these base hospitals are in England or France; two others are en route and possibly by the time this appears will have arrived in England, and four others are about to go. As has been stated, the conception of an organization drawn from an existing civil hospital, whose personnel would embrace the best medical and surgical talent, is a new one. It is this idea of a group of men already acquainted and working together in civil life being transported to the field of action — in this case to a foreign country — where they still work as a unit, that makes the scheme so valuable and practical. It is the conception of a smoothly running machine picked up in all its perfection and transferred to a new location, where, almost by the simple turn of a switch, the entire machine is again in working order. Two men especially deserve the credit — Dr. Crile for suggesting the idea, and Colonel Kean of the American National Red Cross for carrying it out.

1. In connection with this matter see the remarks of Dr. Flexner under "Medical Mobilization and the War."

ANAPHYLAXIS TO SERUM

The use of antitoxic or curative serums in the past has occasionally been attended with disagreeable anaphylactic symptoms — serum rashes, etc. — which have been almost impossible to foretell and difficult to combat. The refinement of antitoxic serums, recently introduced, has lessened the incidence of the undesired reactions, and thus has emphasized the probability that the manifestations of anaphylactic sensitization and the therapeutic properties are not necessarily associated with the same components of the serum. Studies of the chemistry of serum have clearly indicated that the antitoxins are not a common property of all the blood proteins of immunized individuals, but either belong specifically to definite proteins or are associated in some way with special protein fractions. It is the recognition of this fact which has made the concentration of antitoxin so successful.[1] In attempting to free antitoxic serums from the dangers of various anaphylactic phenomena, it has naturally been asked whether the different proteins of the serum play a different part in the anaphylaxis to foreign serum. Do all of them have an equivalent or even common antigenic function? Such questions of immunologic specificity are not new; they have been answered definitely in the case of certain proteins in a way to suggest that the antigenic distinction is possibly dependent on such properties of the different proteins as may be open to the ordinary methods of chemical and physical inquiry, rather than on some mysterious biologic relationship. The work of Wells and Osborne[2] has contributed fundamentally to the establishment of such anaphylactic specificity on a chemical basis. That every sensitization with whole serum is in reality a complex multisensitization has been indicated anew by recent observations conducted for the British Medical Research Committee by Dale and Hartley.[3] These show that each of the three proteins separable from horse serum by their physical and chemical properties — euglobulin, pseudoglobulin, albumin — can act as an anaphylactic antigen. Complete separations of such serum proteins is extremely impracticable, if not actually impossible at present. On the whole, however, the evidence seems in favor of the view that the different proteins of a serum, so far as they can be obtained pure from one another, act as independent anaphylactic antigens. A practical feature of this work may be alluded to here. Dale and Hartley remark that since all the proteins of a serum can act as anaphylactic antigens, it is evident that the ideal to be aimed at, in concentrating the curative element in a specific immune serum, is simply the reduction of the ratio of total protein to antitoxic value; for the purpose of reducing serum reactions, the elimination of albumin seems to be as important as that of euglobulin, when the pseudoglobulin is the fraction carrying the therapeutic power.

1. The Refinement and Concentration of Diphtheria Antitoxic Serums, editorial, THE JOURNAL A. M. A., Jan. 6, 1917, p. 38.
2. Proteins and Anaphylaxis, editorial, THE JOURNAL A. M. A., Jan. 1, 1916, p. 36. Lake, G. C.; Osborne, T. B., and Wells, H. G.: Jour. Infect. Dis., 1914, **14**, 364. Wells, H. G., and Osborne, T. B.: Ibid., p. 377; 1915, **17**, 259; 1916, **19**, 183.
3. Dale, H. H., and Hartley, P.: Anaphylaxis to the Separated Proteins of Horse Serum, Biochem. Jour., 1916, **10**, 408.

THE EFFECT OF COLD ON MALARIAL PARASITES

Experiment has demonstrated that many microorganisms are far less sensitive to low temperatures than was believed to be probable in the earlier days of bacteriology, in view of the permanent damage or death which promptly ensues when the environmental temperature of these lowest forms of life is raised. The detrimental effects of heat have not found a counterpart in the influence of cold. Some bacterial species are known to survive temperatures far below those of the extreme cold occurring in nature. The possibility of a survival of other lower forms, such as the plasmodia, under the adverse conditions represented by low temperature, has not in the past been equally well investigated. King,[1] the government entomologist, has stated that the impression is gained from the literature on malaria that the development of malaria parasites in *Anopheles* is arrested at a temperature of about 60 F. and that the parasites themselves are destroyed at temperatures below this. He recognizes the importance of the question, since it involves the survival of infection in mosquitoes after hibernation or after exposure to low temperatures under natural conditions. In new experiments conducted in the Tulane University Medical Department at New Orleans, King has found that the parasite of tertian malaria in the mosquito host is able to survive exposure to a temperature of 30 F. for a period of two days, 31 F. for four days, and a mean temperature of 46 F. for seventeen days. In a smaller series of tests the sporonts of the estivo-autumnal parasite have shown a resistance to temperatures as low as 35 F. for twenty-four hours. This demonstration of the resistance of *Plasmodium vivax* and *Plasmodium falciparum* to cold and survival through a freezing temperature of several days' duration is significant.

1. King, W. V.: The Effect of Cold upon Malarial Parasites in the Mosquito Host, Jour. Exper. Med., 1917, **25**, 495.

DIFFERENTIATION IN THE PARATYPHOID-ENTERITIDIS GROUP OF BACTERIA

In the case of groups of similar bacteria, such as the members of the paratyphoid-enteritidis group, which cause serious epidemics in man and animals, it is important to determine whether each member is a fixed type, according to human or animal origin, or is constantly changing from one type to another. On the practical side it is desirable to know whether paratyphoid is due to infection from human sources or to infection from the lower animals, as is apparently the case in infection with the enteritidis bacillus in "meat poisoning" epidemics. Certain earlier workers held the members of this group to be indistinguishable; but recently Jordan[2] and Krumwiede[3] have found sufficiently typical cultural and agglutinative differences to justify a division into four groups. The cultural differences consist in the formation or absence of formation of acid and gas in xylose, arabinose and dulcite, and in the degree of rapidity of alkali forma-

2. Jordan, E. O.: The Differentiation of the Paratyphoid-Enteritidis Group, Jour. Infect. Dis., April, 1917, **20**, 457.
3. Krumwiede, Charles; Pratt, Josephine S., and Kohn, L. A.: Studies of the Paratyphoid-Enteritidis Group, Jour. Med. Research, 1917, **35**, 357.

tion in litmus milk. The paratyphoid A strains, which always are derived from human sources, according to Jordan, produce alkali in litmus milk much more slowly than the others, and do not ferment xylose. The paratyphoid B strains, almost always obtained from human sources also, ferment xylose, arabinose and dulcite rapidly, and produce alkali quickly in litmus milk. The enteritidis strains are indistinguishable culturally from the paratyphoid B strains, but have distinct agglutinative reactions. The suipestifer or hog cholera strains, which in almost every case are of porcine origin, ferment xylose but attack arabinose and dulcite slowly or not at all. In their agglutinative reactions all these bacteria fall into this grouping, though in certain rare cases the strains of porcine origin, after being under cultivation for some time, may assume characters of the paratyphoid B group. The agglutinative reactions of the paratyphoid B and hog cholera strains are not always clearly distinctive when the whole serum is used, immune serums for hog cholera strains agglutinating the paratyphoid B strains; but by absorption tests the agglutinins may be separated. As Bainbridge[4] pointed out, if the immune serum is saturated with a suspension of paratyphoid B bacilli and then centrifugated, its potency for strains of porcine origin is not affected.

Medical Mobilization and the War

Training Camps for Medical Reserve Officers in Operation

Last week THE JOURNAL announced that three training camps for physicians were being established at Fort Riley, Kan.; Fort Oglethorpe, Ga., and Fort Benjamin Harrison, Ind. There camps are already established and a fourth camp, for which details have not been worked out, is in process of establishment. At Fort Benjamin Harrison, Ind., Major Percy M. Ashburn will be commanding officer and Major James F. Hall, assistant. Other instructors will be: Majors Jay R. Shook, Charles F. Morse, William A. Powell and George H. Scott, and Captains C. C. McCornack, S. S. Creighton, Howard McC. Snyder, Joseph E. Bastion and Taylor E. Darby. At Fort Riley, Kan., Major William N. Bispham will be commanding officer, and Charles R. Reynolds, assistant. Other instructors will be: Majors Frank W. Weed, Jacob M. Coffin, William W. Reno, Craig R. Snyder and Henry C. Pillsbury; Captains Felix R. Hill, Thomas J. Flynn, John J. Reddy and William H. Richardson, and First Lieut. Harrison W. Stucky. At Fort Oglethorpe, Ga., Lieut.-Col. Henry Page will be commanding officer and Major Roger Brooke, assistant. Other instructors will be: Majors Leartus J. Owen, Wallace De Witt and Robert L. Carswell; Captains Mahlon Ashford, Eugene G. Northington, Alexander D. Parce, Calvin D. Cowels, Jr., Samuel J. Turnbull and Royal Reynolds.

The training will consist of three periods of four weeks each. During the first month, the duties which the enlisted man is expected to perform will be taught; during the second month the duties of the medical officer and book instruction will be given; and the third month will be devoted to training in the field. In case of emergency, it will then be possible to cut off the last month of training. An ambulance and a field hospital will be established at each training camp.

Organization of Training Camps

Three new branches of the medical service of the army have been announced in connection with the organization of training camps. These branches are: a division of sanitary inspection, to be headed by Col. F. P. Reynolds; a district of hospitals and hospital construction, headed by Col. James B. Glennan, and a division of medical military instruction, headed by Col. Ed. L. Munson. The three branches are coordinated under the direction of Col. Henry A. Birmingham.

Colonel Glennan's division of hospitals and hospital instruction will be immediately concerned with the preparation of thirty-two hospitals for the divisional cantonments. It is estimated that each cantonment hospital will have a capacity of 1,000 beds. It will also be necessary to build several general clearing hospitals and one or two receiving hospitals in seaport cities.

The division of Colonel Reynolds'—sanitary inspection—has to do with all sanitary matters pertaining to armies in the field, such as kitchens, mess shelters, ice boxes, and all sanitary appurtenances. The work will be carried on by a corps of general sanitary inspectors, with the ranks of colonels and lieutenant-colonels. A general sanitary inspector will also be attached to the commanding general of each army.

Medical Reserve Officers and Registration

The President has held, according to an order of the Provost Marshal General, dated May 24, 1917, that the Selective Service Act of May 18, 1917, and the proclamation and regulations of the same date, do not require the registration on June 5 of members of any duly organized and recognized force, naval or military, subject under other laws of the United States to be called, ordered or drafted into the military or naval service of the United States. The registration regulations are to be construed as providing for the exception from registration of persons in the military or naval service of the United States, which includes all officers and enlisted men of the Regular Army, the Regular Army Reserve, the Officers Reserve Corps, the Enlisted Reserve Corps, the National Guard and National Guard Reserve recognized by the Militia Bureau of the War Department, the Navy, the Marine Corps, the Coast Guard; and the Naval Militia, Naval Reserve Force, Marine Corps Reserve, and National Naval Volunteers, recognized by the Navy Department.

Visual Tests for the Medical Corps

To the Editor:—You fail to mention the physical qualifications for the Medical Reserve Corps and the regular Medical Corps. Many, many physicians wear eyeglasses. Would this act as a disqualification or hindrance? Is myopia (in the case of physicians) or other ailments of minor character, cause for rejection or exemption? Would a commission be refused on these grounds to a physician otherwise qualified?

ANSWER.—The physical examination is thorough. The applicant must certify that he labors under no physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required. Errors of refraction, if vision is not below $^{20}/_{100}$ in either eye, are not causes of rejection, provided they are not accompanied by ocular disease and are entirely corrected by appropriate glasses. With the proper correction by lenses the visual acuity of each eye must not fall below $^{20}/_{20}$. While using the refractive correction required for distant vision, in the case of ametropic conditions, the applicant must be able to read No. 1 Jaeger (.50 D. Snellen) at the usual distance for near work (13 to 20 inches) while using both eyes. Strabismus of any type or color blindness for red, green or violet will be a cause for rejection. The foregoing requirements apply to eyes free from disease, either acute or chronic. All lesions of either fundus oculi, whether old or of recent origin, as determined by ophthalmoscopic examination, will be causes for rejection. A certificate from a competent oculist may be accepted at the option of the examining board as evidence of freedom from lesions of the fundus.

Base Hospitals Ordered to Active Duty

The following base hospitals have been ordered to active duty and will sail shortly for England:

BASE HOSPITAL NO. 4, MASSACHUSETTS GENERAL HOSPITAL, BOSTON.—The following are the medical and surgical members of this unit: Frederic A. Washburn, director; Lincoln Davis, assistant director, surgical service; Roger Kinnecut, assistant director, laboratory service; staff surgeons, Richard

4. Bainbridge, F. A., and O'Brien, R. A.: On the Paratyphoid Group of Bacilli, Jour. Hyg., 1911, **11**, 68.

F. O'Neil, William J. Mixter, Zabdiel B. Adams, Frederick C. Irving, Dewitt S. Clark, George A. Leland, Jr.; staff physicians, E. Lawrence Oliver, James H. Means, Paul D. White, Wade S. Wright, Joseph C. Aub, Carl A. L. Binger; Adelbert S. Merrill, roentgenologist; Oscar Teague, bacteriologist; Augustus G. Reynolds, quartermaster; Henry C. Marble, registrar; Henry K. Sherrill, chaplain; Ralph A. Hatch, oculist; Harold G. Tobey, laryngologist; George Clymer, neurologist and alienist; William H. Gullifer, dentist; William H. Sherbune, assistant dentist.

BASE HOSPITAL No. 15, THE MACKAY UNIT OF THE ROOSEVELT HOSPITAL, NEW YORK.—The medical members of this base hospital are as follows: Major Charles H. Peck, director; Major James I. Russell, assistant director, surgical service; Major Rolfe Floyd, chief of medical service; Capts. Alfred Stillman, Harold Barclay, Clarence McWilliams, Calvin B. Coulter, Henry James, Edward F. Kilbane, Joseph Steiner, Gouverneur M. Phelps; First Lieuts. William C. White, Henry W. Cave, John H. Carlisle, Alexander T. Martin, Augustus Street, William B. Hetzel, John E. Williams, Lewis S. Booth, Robert T. Buckley, Thomas C. Peightal, Ralph A. Hurd; dentists, J. C. Vandervoort, John R. Merrill; chaplain, Rev. Francis B. Barnett.

BASE HOSPITAL No. 17, HARPER HOSPITAL, DETROIT.—Major Angus McLean, director.

BASE HOSPITAL No. 18, JOHNS HOPKINS HOSPITAL, BALTIMORE.—J. M. T. Finney, director.

Preparedness of Medical Officers for Development of Epidemic Meningitis

At the meeting of the General Medical Board of the Advisory Commission of the Council of National Defense, at Washington, D. C., May 27, Dr. Simon Flexner spoke of the preparations that the Rockefeller Institute had made for instructing medical officers in the technic and procedure for the detection of meningococcus carriers and for review of other laboratory methods that were necessary in the management of this disease. Dr. Flexner said, in part, that there is an urgent demand for doctors for the army and navy and that many of them had had training so recently that it would be unnecessary perhaps to supplement that training in the manner proposed. Others have not had training so recently, and it might be advisable to undertake to supplement their training. Undoubtedly one of the situations that will arise has to do with infectious diseases. Certainly it has been the experience in European armies in this war that recruiting is attended with the appearance of contagious diseases, sometimes on a considerable scale, among the new recruits, introducing diseases which must be met immediately, and which are often a real menace to the work to be carried out in their training. Certain of the diseases which were formerly a severe menace among troops, such as typhoid and paratyphoid, are now much better controlled. These diseases have been reduced to the minimum. There are other diseases for which there is no such artificial means of protection, and which constitute a great menace. One of these is epidemic meningitis, a disease which has been prevalent for many years. It has never died out since the epidemic which appeared in the early part of the present century. There is reason to believe that we shall be confronted with epidemic meningitis very soon after recruiting actually begins. The disease has already appeared in certain of the camps. It is desirable and necessary that we should deal with these epidemics in the most effective manner at the outset, and, among other things, we should give special instruction to certain numbers of medical officers in order that they may put into effect the experience recently gained abroad, where these epidemics have appeared. "I am not a military person, and therefore do not know how the people are housed, but this I do know that just as soon as a case of meningitis is discovered, the rest of the men in the shack should not be permitted to mingle with the rest of the recruits until all of them have been subjected to a meningitis examination, to determine whether or not any man among them is a carrier of meningococcus. There is no difficulty about the sick man, as he will be taken care of in the hospital, and not be a menace to the rest. But the men who are not in the hospital and who are carriers of the coccus will be a great menace. If they are carriers they should be discovered and can be discovered in twenty-four to forty-eight hours. Those who are not carriers can be released, but those who are must be looked after as carefully as the sick man, and not released any more than the sick man should be released until they are no longer carriers. The particular service which we should like to render is this: There are at the Rockefeller Foundation many men who have had the good fortune, or misfortune, of particular experience with meningitis, and we should like the privilege of training a certain number of men who will be sent to these camps, cooperating with the clinical department, and perhaps being a part of it, who will also be doing some of the bacteriologic work of these camps. We wish to qualify them with the latest knowledge which we have gained in these diseases. If these men are with us four weeks we can teach them a number of supplementary things. I have the highest hope that what we are doing will be done elsewhere if found to be worth while. Chicago has perhaps men better versed in this special line than New York, and perhaps there are other places. There is the Army Medical School, and the Navy Medical School. They will doubtless do similar things. Where the demand for men of this type is so great, no single organization can train enough men for this purpose. We propose to carry on this work through the summer and the fall, but if it seems worth while, some other institutions will do likewise. We feel confident that four weeks will be sufficient time for this work but this will have to be determined by experience. We feel confident that it will be of value to know that wherever men are affected with this disease there will be at least one man who has at his fingers' end the training now in use at the recruiting stations and hospital organizations dealing with the troops abroad."

Qualifications of One Thousand Physicians for Immediate Service Abroad

To the Editor:—In your "Current Comment" of May 26 I see that 1,000 men have been asked for service in France. To whom shall I apply in order to get into this service?

FRANK X. POMAINVILLE, M.D., Grand Rapids, Wis.

To the Editor:—Can you give me some information relative to the procedure, qualifications, etc., of the 1,000 physicians France has asked for? More specifically, what is the remuneration, the term of service and work rendered, that is, in base hospitals or on the battle field? Do they go into Red Cross units or directly into the service of the French government?

NOAH ZEHR, M.D., Fort Wayne, Ind.

ANSWER.—The 1,000 physicians mentioned are being selected from among members of the Medical Reserve Corps, who volunteer for the service, by the surgeon-general's office with the assistance of the state committees of national defense. To obtain this assignment abroad, the applicant must be under 35 years of age, well qualified professionally and especially so physically. When assigned abroad by the surgeon-general of the army, these physicians go as officers of the United States Army and are not connected with any base hospital units or attached in any way. The remuneration is the same as that of the rank which they hold in the Medical Reserve Corps.

Protecting the Practice of the Absent Physician

The Missouri State Medical Association at its last annual meeting adopted resolutions to the effect that those physicians who remain at home should volunteer to care for the practice of those called to service and to turn over to them or to their dependents a liberal proportion of the income of this work. Plans are being formulated for rendering the resolutions effective. These plans are to be submitted to the county societies for approval.——The Mississippi State Medical Association at its recent meeting adopted a resolution to the effect that each physician keep a separate record of the charges for the patients of colleagues who have left to join the government service. When the fees are collected, one third will be turned over to the absent physician or to his family, one third to the American National Red Cross and the remaining one third to the physician who undertakes the service. The Red Cross fees are to be turned over to the local chapter.——The New York State Medical Society agreed that each physician ask every new patient the name of his usual or last medical attendant, and if this doctor is in active service, to turn over to him or to his family one third of the fees collected from the patient. Further, it was agreed that if patients are referred by a physician who has not previously referred patients and the physician is in the government service, one third of the fee shall be turned back. Finally, it was agreed that the physician will not attend such new patients for one year after the resumption of practice of the physician who was in the government service.

Care for Dependents of Physicians

To the Editor:—Will the federal government undertake the relief and support of the dependents of doctors and others who may be sent by our government across seas for service as civilians or attached to some branch of the service of the allies?

Answer.—The policy of the War Department in this regard is as yet undetermined, because Congress has not completed its consideration of military legislation. In general, it may be said that the department desires, at the outset, to exempt from military service, as far as possible, those having dependents. Realizing that this cannot be done in all instances, the department has requested Congress to provide an adequate sum to take care of the dependents of such as cannot be so exempted. Doctors who are sent across the sea will be commissioned officers of the army, and the pay allowed by law is by the department deemed to include adequate provisions for their dependents.

"Michelaines" for the Soldiers

To the Editor:—In The Journal, Jan. 23, 1915, page 353, are the directions and picture of a very fine sleeveless sweater for soldiers. I am very anxious to use all my spare time knitting for the soldiers and would like very much to get this pattern if possible, as it was recommended to me by a doctor as very good.

Answer.—The sweaters in question were known as "Michelaines," after Dr. Michel, the inventor. It is a scarf which can be used as a head, throat, chest or arm protector. It consists essentially of a woolen band 48 inches long and 16 inches wide, with a median slit 8 inches long, large enough for the soldier's head to pass through.

The particular crochet stitch which Dr. Michel recommends for this purpose is the following: Use medium sized wool and a crochet needle having a diameter of one fourth of an

inch. 1. Make a loose chain 48 inches long. 2. Crochet two extra stitches for turning. 3. Throw thread over needle. For the first row, take up the two threads of the chain, throw thread over, put it under the two stitches of the first loop of chain; pull through; throw thread over again, then pull through the first two, then pull through the second two;

repeat to end of chain. Take two stitches to turn with; proceed exactly as the first row only put through the single back stitch. Crochet eighteen rows up, then on the nineteenth row stop short 4 inches from the middle; break the thread. Begin on the other side 4 inches from the middle, thus leaving an 8 inch opening and crochet to the end. Continue again as before until you have eighteen more rows, then fasten the threads securely. Sew on buttons as shown in the figure.

Ambulance Ship Transferred to Navy.—The steam yacht *Surf*, owned by Dr. John A. Harriss, has been loaned to the navy for the duration of the war. It is to be used as an ambulance ship.

Rockefeller Foundation to Study Tuberculosis at the Front.—Dr. Livingston Farrand, president of the University of Colorado, has been appointed by the Rockefeller Foundation to undertake a campaign against tuberculosis in France under the auspices of the foundation. Aside from the small group of Americans, the personnel of his organization will be French. The Rockefeller Foundation has made an initial appropriation of $100,000 for the work—central organization, the equipping of mobile units and the publication of literature. Dr. Farrand has been granted a year's leave of absence so that he may have all of his time for this work.

Reserve Officers on Active Duty

The following officers have been ordered to active duty as mentioned:

Major Winford H. Smith, M. R. C., Baltimore, Md., to Washington, D. C., for duty.

Major Arthur C. Christie, M. R. C., Washington, D. C., to active duty with Surgeon General of Army.

Capt. Louis Barth, M. R. C., Grand Rapids, Mich., to active duty at Grand Rapids.

Capt. Walter A. Wells, M. R. C., Washington, D. C., to active duty at Washington.

Capt. Louis A. Molony, Cincinnati, O., Capt. Charles T. Hunt, Miamisburg, O., and First Lieut. J. Louis Ransohoff, Cincinnati, O., to Fort Thomas, Ky.

Capt. Howard Fox, M. R. C., New York, from Fort Slocum, N. Y. to New York, medical supply depot for duty.

Capt. Eugene R. Hochstetter, Jr., and First Lieut. James D. L. McPheeters, M. R. C., Chattanooga, Tenn., now at Fort Oglethorpe, Ga., to duty at training camp at that post.

Capt. William E. Shea, M. R. C., Fort Missoula, Mont., to active duty at that post.

First Lieuts. Roy B. Storms, M. R. C., Kempton, Ind.; James M. Smith, M. R. C., Lehman M. Dunning, Claud Du Vall Holmes and Arthur F. Weyerbacher, M. R. C., of Indianapolis, Ind., to active duty at Fort Benjamin Harrison, Ind.

Capt. James Kenan, M. R. C., Selma, Ala.; First Lieuts. Rae W. Whidden, M. R. C., New York City; Paul V. Woolley, M. R. C., Kansas City, Mo.; Joseph S. Gatlin, M. R. C., Laurel, Miss.; Harry B. Schmidt, M. R. C., Detroit, Mich.; Charles D. Lockwood, M. R. C., Pasadena, Cal.; Alpheus F. Jennings, M. R. C., Detroit, Mich.; Henry R. Carstens, M. R. C., Detroit, Mich.; and John W. Sherrick, M. R. C., Ann Arbor, Mich., to active duty at Washington, D. C., Army Medical School, for instruction.

First Lieuts. William L. Culpepper, M. R. C., Goose Creek, Tex.; Forrest P. Baker, M. R. C., Booneville, Ark.; James E. Dewey, Murray C. Stone and Horace A. Lowe, M. R. C., of Springfield, Mo.; Eugene R. Gordon, M. R. C., McComb, Miss.; William T. Fitzsimons and Oliver S. Gilliland, M. R. C., of Kansas City, Mo.; to active duty at Fort Logan H. Roots, Ark.

First Lieut. Chester F. S. Whitney, M. R. C., New York City, to report at Eastern Department for duty.

First Lieuts. Clarence B. Francisco, M. R. C., Kansas City, Mo., and Frank W. Snow, M. R. C., Newburyport, Mass., for instruction to Washington, D. C.

First Lieuts. John R. Brinkley, M. R. C., Fulton, Kans.; George R. Tabor, M. R. C., Crystal City, Tex.; Edward P. S. Ficklen, M. R. C., New Orleans, La.; Nicolo V. Alessi, M. R. C., Hammond, La; James M. Adams, M. R. C., Locust Ridge, La.; Arthur W. C. Bergfeld, M. R. C., Seguin, Tex.; Peter L. Harvie, M. R. C., Troy, N. Y.; Lucius L. Handly, M. R. C., Houston, Tex.; Edgar L. Gilcreest, M. R. C., Gainesville, Tex.; Louis C. Kuyrkendall, M. R. C., McAlester, Okla.; John W. Kinsinger, M. R. C., Roswell, N. M.; Jesse W. Lea, M. R. C., Jackson, La.; William D. Petit, M. R. C., Marfa, Tex.; Louis H. Pate, M. R. C., Carlsbad, N. Mex.; George N. Ricks, M. R. C., Pleasanton, Tex.; Harold A. Spilman, M. R. C., Ottumwa, Ia.; Ralph V. Smith, M. R. C., Tulsa, Okla.; Thomas H. Scott, M. R. C., Fort Morgan, Ala.; Fenton M. Sanger, M. R. C., Oklahoma City, Okla; Henry O. Wyneken, M. R. C., San Antonio, Tex.; Leonard S. Willour, M. R. C., McAlester, Okla.; Bacil A. Warren, M. R. C., Leupp, Ariz.; Albert R. Warner, M. R. C., Komatke, Ariz.; Thaddeus S. Troy, M. R. C., Howard L. Taylor, M. R. C., Cleveland, O.; Charles E. Fitzsimmon, M. R. C., Amarillo, Tex.; Ira Cohen, M. R. C., New York City; Frank L. Carson, M. R. C., Shawnee, Okla.; Abraham L. Blesh, M. R. C., Oklahoma City, Okla.; Walter G. Bisbee, M. R. C., Chandler, Okla.; and Alexander A. Brown, M. R. C., San Antonio, Tex.; to active duty and to report by telegraph to commanding general, Southern Department.

The following officers of M. R. C. to active duty, Letterman General Hospital, San Francisco, Cal.: First Lieuts. Sylvan L. Haas, San Francisco, Cal.; and Phillip M. Thomas, Sacramento, Cal. First Lieut. Walter S. Johnson, Los Angeles, Cal.

First Lieut. Harvey R. Gaylord, M. R. C., Buffalo, N. Y., to active duty at Fort Niagara, N. Y.

First Lieut. Conrad Berens, Jr., M. R. C., New York City, to active duty at Mineola, Long Island, N. Y.

The following officers of M. R. C. to active duty at Fort Sheridan, Ill.: First Lieuts. Henri S. Babcock, Danville, Ill., Ashley B. Morrill, Chicago, Ill.; Claude H. Ogden, Gary, Ind.; Walter A. Ford, Kankakee, Ill.; Morris Fishbein, Roy T. Rodaway, Charles D. Eldred, Louis Rudolph, Arthur C. Gillam, Chicago, Ill.; and John W. Tope, Oak Park, Ill.

First Lieut. Charles L. Gaulden, M. R. C., Elizabeth, La., to Fort Myer training camp, for duty.

First Lieut. Francis C. Tyng, M. R. C., Salt Lake City, Utah, at Fort Douglas, Utah.

First Lieut. Frank R. Mount, M. R. C., Oregon City, Ore., to Fort Worden, Wash.; First Lieut. Charles R. Glenn, Kelso, Wash., to Fort Lawton, Wash.

Capt. Lewis W. Falkner, M. R. C., Youngstown, N. Y., to training camp at Fort Niagara, N. Y.

Major Louis C. Duncan, M. C., Ft. Bliss, Tex., to citizens' training camp, Fort McPherson, Ga.

First Lieut. Charles W. Rauschenbach, M. R. C., Baltimore, Md., to Fort Myer.

First Lieut. Arthur W. Allen, M. R. C., Boston, Mass., to Boston.

First Lieuts. John H. Carlisle, Passaic, N. J., and Frederick G. Goodridge, M. R. C., Comfort Center, Conn., to Governors Island, New York.

Resignation by First Lieut. Timothy J. Butler, M. R. C., Eagle Pass, Tex., of commission that corps accepted.

Following officers of Medical Corps to report to Surgeon General of Army for temporary duty: Col. James D. Glennan, Lieut. Col. Edward L. Munson and Lieut. Col. Frederick P. Reynolds. (May 17, War D.)

Lieut. Col. Jere B. Clayton, M. C., to Fort Logan H. Roots, Ark., for duty. (May 5, S. D.)

Major William N. Bispham, M. C., relieved at Fort Sheridan, to Fort Riley, citizens' training camp, for temporary duty. (May 16, War D.)

Major George H. R. Gosman, M. C., from further duty in Southern Department to Fort Ethan Allen, Vt., for duty. (May 18, War D.)

Par. 57, S. O. 111, May 14, 1917, War D., relating to Major Charles F. Craig, M. C., is revoked. (May 18, War D.)

Major Percy L. Jones, M. C., to Philadelphia, Pa., as assistant in organization. (May 16, War D.)

Major James D. Fife, M. C., from Fort Sam Houston to St. Louis, Mo., for duty as commanding officer, Base Hospital No. 21. (May 5, S. D.)

Capt. Paul W. Gibson, M. C., from Fort Slocum to New York, N. Y., medical supply depot, for duty. (May 18, War D.)

The following officers of Medical Corps to the place named for temporary duty with Reserve Engineer regiment specified: Capt. Harry H. Van Kirk to New York, 1st Engineers; Capt. Albert S. Bowen to St. Louis, Mo., 2d Engineers; Capt. William H. Thearle to Chicago, Ill., 3d Engineers; Capt. Albert P. Clark to Boston, Mass., 4th Engineers; Capt. Joseph Casper to San Francisco, Cal., 5th Engineers; Capt. Edward L. Napier to Detroit, Mich., 6th Engineers; Capt. Wibb E. Coper to Atlanta, Ga., 7th Engineers; Capt. Howard Clarke to San Francisco, Cal., 8th Engineers; Capt. Daniel F. Maguire to Philadelphia, Pa., 9th Engineers. (May 16, War D.)

Capt. John P. Fletcher, M. C., El Paso, Texas, to Washington, field medical supply depot, temporary duty. (May 18, War D.)

Capt. Francis X. Strong, M. C., to charge of medical supply depot, El Paso, Texas. (May 18, War D.)

First Lieut. Paul A. Schule, M. C., to Fort Snelling, Minn., to establish field laboratory at that post. (May 18, War D.)

Major James I. Mabee, M. C., to Pittsburgh, 5th Reserve Engineers, for temporary duty. (May 21, War D.)

So much of Par. 31, S. O. 113, May 16, 1917, War D., as relates to Capt. Joseph Casper, M. C., is revoked. (May 21, War D.)

First Lieut. John P. Lord, M. R. C., to active duty at Fort Omaha. (May 19, War D.)

Following officers, M. R. C., to active duty and to place indicated for duty: First Lieuts. Ernest W. Cavaness to Kansas City, Mo.; Lloyd Thompson to Little Rock, Ark.; Marvin S. Veal, Daniel Boone, Ky., to Louisville, Ky.; Edward C. Ellett to Memphis, Tenn.; Benjamin B. Rowley, Whitefish Bay, Wis., to Milwaukee, Wis.; Capt. Joseph R. Hollowbush to Rock Island, Ill.; 1st Lieuts. David M. Berkman, Rochester, Minn., to St. Paul, Minn.; Harold S. Arnold, New Haven, Conn., to New London, Conn.; Peter L. Geaugh, Pawtucket, R. I., to Newport, R. I.; Rowland B. Moore to Portland, Me.; William H. McLan to Wheeling, W. Va.; Eric A. Fennel to Cincinnati, Ohio; Capt. John G. Stowe to Buffalo, N. Y.; 1st Lieuts. William J. Du Bois to Grand Rapids, Mich.; Francis X. Mulherin, Augusta, Ga., to Savannah, Ga.; Frank R. Ruff, Duke, N. C., to Wilmington, N. C., and Solomon P. Klotz, McComb, Miss., to Vicksburg, Miss.; Capt. Frederick T. Brown to New Orleans, La.; 1st Lieut. Horace F. Stiltner, Chickamauga, Ga., to Chattanooga, Tenn.; Major Francis L. Parker to Charleston, S. C.; 1st Lieut. Robert Goldthwaite to Montgomery, Ala.; Capt. John O. Rush to Mobile, Ala.; 1st Lieuts. Samuel Aronovitz to Jacksonville, Fla.; Jerre G. Lynch to Los Angeles, Cal.; George S. Buck to Portland, Ore.; Donald V. Trublood to Seattle, Wash.; Verne R. Mason to Baltimore, Md.; J. Adolph Rollings, Roda, Va., to Norfolk, Va., and Meredith I. Samuel to Wilmington, Del.; Capt. Moses H. Darnall to Washington; Capt. Walter H. Moursund to Dallas, Texas, and 1st Lieut. Eugene V. Powell, Fort Worth, Texas, to Galveston, Texas.

STATE COMMITTEES OF NATIONAL DEFENSE, MEDICAL SECTION

The General Medical Board of the Advisory Commission of the Council of National Defense announces that it has found it necessary in order to coordinate the activities of the various organizations now engaged in promoting medical preparedness to merge these organizations into a single body in each state. Since the various state committees of American Physicians for Medical Preparedness were organized about a year ago, and especially since the situation has become acute, many independent committees and other organizations have been formed, each vying with the other to show its patriotism and to accomplish the utmost good in a medical military way for the nation.

The existence of so many independent agencies involes duplication of effort and lacks directness of purpose. It is believed that these defects will be corrected by the plan that the Committee has just adopted. The committees and organizations that are to be merged in the new state committees include the following:

1. Members of the National Committee of the General Medical Board.
2. The original state Committees of American Physicians for Medical Preparedness.
3. The presidents and secretaries of the state medical societies.
4. The chairman of the Governor's committee of the State Committee of Defense.
5. Representatives of the American National Red Cross, the Medical Reserve Corps, medical officers of the National Guard and medical schools.
6. Members of the National Committee of the Committee of American Physicians for Medical Preparedness presiding in each state.
7. Other physicians who have been especially active in cooperating with various committees with the Surgeon-General's Office, and with the General Medical Board.

The new committees which will be known as the State Committees of National Defense, Medical Section, are as follows:

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Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST, SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Power Company Surgeons Organize.—At a meeting of the surgeons of the Alabama Power Company, in Birmingham, April 16, Dr. Samuel R. Benedict, Birmingham, was elected president; Dr. Benjamin B. Simms, Talladega, vice president, and Dr. James P. Colvin, Lincoln, secretary-treasurer. The name of the new organization is the Association of Surgeons of the Alabama Power Company.

State Association Elects New Officers.—At the annual meeting of the Medical Association of the State of Alabama, held in Montgomery, April 17-20, under the presidency of Dr. Henry Green, Dothan, Birmingham was selected as the next place of meeting, and the following officers were elected: president, Dr. William D. Partlow, Tuscaloosa; vice president, Dr. William F. Betts, Evergreen; censors, Drs. William H. Sanders, Montgomery, and Benjamin L. Wyman, Birmingham, and councilors, Drs. Ross C. Speir, Furman; Norman G. James, Hayneville; Henry B. Disharoon, Roanoke; James C. Martin, Cullman, and Frank L. Chenault, Albany. Dr. Samuel W. Welch, Talladega, was elected state health officer, succeeding Dr. William H. Sanders, and Dr. William W. Dinsmore was elected state prison inspector. The Jerome Cochran lecture was delivered by Dr. William J. Mayo, Rochester, Minn., on "The Importance of Septic Infection in the Three Great Plagues."

ARIZONA

New Officers.—The Arizona Medical Association held its twenty-sixth annual meeting in Douglas, April 17 and 18, under the presidency of Dr. Robert Ferguson, Bisbee. The following officers were elected: president, Dr. William A. Holt, Globe; vice presidents, Drs. William W. Watkins, Phoenix; Turner B. Smith, Morenci, and Charles S. Vivian, Humboldt; secretary, Dr. Clarence E. Yount, Prescott (reelected); treasurer, Dr. Roderick D. Kennedy, Globe, and delegate to the American Medical Association, Dr. Joel I. Butler, Tucson.

CALIFORNIA

Personal.—Lieuts. Sylvan L. Haas, San Francisco, and Philip M. Thomas, Sacramento, M. O. R. C., have been placed on the active list, and ordered to duty at the Letterman General Hospital, San Francisco.

FLORIDA

Porter Resigns.—May 16, Dr. Joseph Y. Porter, state health officer since 1889, resigned to enter the military service. Dr. Joseph E. Taylor, Live Oak, has been appointed Dr. Porter's successor.

State Association Meeting.—The annual meeting of the Florida Medical Association was held at Atlantic Beach, May 18 and 19, under the presidency of Dr. Edmund W. Warren, Palatka. Tampa was selected as the next place of meeting, and the following officers were elected: president, Dr. Ralph N. Greene, Jacksonville; vice presidents, Drs. Henry C. Dozier, Ocala; D. A. McKinnon, Marianna, and Henry Hanson, Jacksonville, and secretary-treasurer, and editor of the medical journal, Dr. Graham E. Henson, Jacksonville.

ILLINOIS

Physician Brings Suit.—Dr. Hart F. Litchfield, Quincy, is reported to have brought suit against the Central Business Men's Association for failure to pay a claim for disability.

Sanatorium Contract Let.—The Peoria Tuberculosis Council at its meeting, May 12, awarded contracts for the construction of the sanatorium to be erected on the site recently purchased for $10,000. The buildings will cost about $49,000.

County Secretaries Elect Officers.—At the annual meeting of the Illinois County Secretaries Association at Bloomington, May 8, Dr. Flint Bondurant, Cairo, was elected president; Dr. Thomas D. Doan, Scottville, vice president, and Dr. Fernando C. Gale, Pekin, secretary.

Service at Home.—Lieut.-Col. Jacob Frank, surgeon-general of Illinois, has worked out a thorough and comprehensive plan, whereby physicians, dentists, druggists, nurses and hospitals will cooperate in furnishing free service to the needy families of men from Chicago who have entered the military service. The plan contemplates the division of the city into districts, in each of which physicians, who on account of age or for other reasons are disqualified for active service in the field, may render service.

Chicago

Landis Speaks Before Physicians.—At the meeting of the Physicians' Club of Chicago, May 24, Judge Kenesaw M. Landis urged every citizen to stand squarely behind the nation in this crisis.

Internal Medicine Society.—The Chicago Society of Internal Medicine held its eighteenth annual meeting in the Northwestern University building, May 28. Papers were read by Drs. Peter Bassoe, Charles Spencer Williamson, F. M. Smith, James B. Herrick and Walter W. Hamburger.

New Medical School.—The Rockefeller Foundation and General Education Board announced, May 25, that the University of Chicago, by raising $3,461,500, had secured the $2,000,000 fund offered by the foundation, toward building a medical school in Chicago, and which was contingent on the securing of this amount.

Slain Nurses Honored.—A committee has been appointed to provide bronze memorial tablets to be placed in the Illinois Training School for Nurses and in the Evanston Hospital, in memory of Miss Helen Burnett Wood and Mrs. Edith Ayres, nurses who were killed by a shell explosion while en route to France. The body of Miss Wood was brought to Evanston and buried with military honors, May 23.

Personal.—Dr. Sadie B. Adair has been named as a trustee of the board of education.——Dr. Otto T. Freer spoke at the monthly meeting of the Portland (Ore.) Academy of Medicine, May 10, on "Acute Rhinitis."——Dr. Henry W. Abelmann sustained painful injuries, May 7, in a collision between his car and another automobile.——Dr. Charles Louis Mix delivered an address on heart disease before the Shawnee County (Kan.) Medical Association at Topeka, May 4.

INDIANA

Societies Unite.—At a meeting of the Delaware County Medical Society, May 4, it was decided to unite with the Blackford County Medical Society, the joint body to be known as the Delaware-Blackford Medical Society.

District Society Meetings.—At the thirteenth annual meeting of the Fourth District Medical Society, held at Greensburg, May 22, North Vernon was selected as the next place of meeting and the following officers were elected: president, Dr. Elmer U. Wood, Columbus; vice president, Dr. Edward J. Libbert, Aurora; secretary, Dr. John H. Green, North Vernon, and treasurer, Dr. Dennis L. McAuliffe, North Vernon.——The annual meeting of the Ninth District Medical Society was held in Noblesville, May 18, and the following officers were elected: president, Dr. Fred A. Dennis, Crawfordsville; vice presidents, Drs. Omer D. Hutto, Kokomo, and Alvin R. Kerr, Attica, and secretary-treasurer, Dr. Herman A. Beck, Lebanon. Tipton was selected as the next place of meeting.

Personal.—The following officers of the Medical Officers Reserve Corps have been placed on active duty, and ordered to duty at the training camp at Fort Benjamin Harrison: Lieuts. Roy B. Storms, James M. Smith, Lehman M. Dunning, Claude Du Vall Holmes and Arthur F. Weyerbacher, all of Indianapolis.——Dr. Paul F. Martin, Indianapolis, has returned after several months' service in military hospitals in Bohemia and Austria.——Dr. Charles P. Emerson, Indianapolis, dean of the Indiana Medical School, has been appointed a member of the State Council of Defense.——Dr. C. Herbert Bruner, Greenfield, has resigned as lieutenant, M. C., Ind. N. G., to take up the practice of his father, the late Dr. C. K. Bruner. ——First Lieut. Perry C. Traver, M. C., U. S. R., South Bend, has been assigned to active duty at the Notre Dame University, Notre Dame, Ind., for the examination of applicants for admission to the citizens' training camps. On completion of this duty he will be relieved from further active duty.

MARYLAND

Meetings.—A joint meeting of the Carroll, Howard and Baltimore County medical societies was held at the Spring-

field State Hospital, Sykesville, May 24. There were two sessions, one at 10:30 a. m., and the other in the afternoon.

Doctors Subscribe to Liberty Loan.—At a meeting of the medical profession held at Osler Hall, Baltimore, May 23, $142,800 was subscribed for Liberty Loan Bonds. Dr. William S. Baer was the presiding officer. Subscriptions of from $50 to $10,000 were received. One hundred and twenty physicians and surgeons attended the meeting.

Seventy Thousand Dollars to School of Hygiene and Public Health.—The School of Hygiene and Public Health of the Johns Hopkins University has been given $70,000 for maintenance by the Rockefeller Foundation. The appropriation will be for the school's fiscal year, beginning July 1. The establishment of the department of hygiene and public health at Hopkins has been made entirely with money given by the Rockefeller Foundation, which to date has given about $167,000 for buildings and equipment. It is expected that the school will be open in October next. Dr. William H. Welch will be the director, and with Dr. William H. Howell, professor of physiology, has been in charge of the work of organization.

Gift to Johns Hopkins.—Dr. Frank J. Goodnow, president of Johns Hopkins University, has just announced that the Johns Hopkins Medical School has received a gift of $350,000 from the General Educational Board in New York. The money is to be divided between the laboratory department, which is to receive $250,000, and the department of pediatrics, which receives the remaining $100,000. This last named amount is to be used for the support of the Harriet Lane Home for Children, which has been enlarged and improved at considerable cost. Dr. John Howland is in charge of this department of the hospital. The departments of pathology and physical chemistry and several minor branches of the laboratory department will divide the $250,000. During the past two years the General Board of Education has contributed about $1,450,000 for full time medical teaching, which makes the gifts of this board to Johns Hopkins University total about $1,750,000.

Increase of Tuberculosis in Baltimore.—Eighty-one cases of tuberculosis, thirty-five of which were fatal, were reported to the health department during the past week. Health Commissioner John D. Blake stated that the disease was on the increase in the city, largely because the department is not properly equipped to handle it. More cases now come to the attention of the department because it is stringently enforcing the law requiring physicians to report infectious diseases; and also because the nurses in the tuberculosis division are doing more effective work in finding and having persons suffering with tuberculosis treated. The disease is being spread by the negro population, as inadequate provision is made for the treatment of this class. There are a few beds at Bay View Hospital, but the number is insufficient to meet the demands. As a result, those having the disease take care of themselves in their homes and even go out as laundresses and servants. The housing committee appointed recently by the mayor which is working out plans for better sanitary living conditions among negroes and white families in congested neighborhoods is expected to develop an effective agency in antituberculosis work.

For Care of the Crippled Soldiers.—Preparing for the work ahead when American troops take their places on the firing line in Europe, a group of local scientists and practical workers are planning to take care of the crippled soldiers who will return to this country. The plan is to reeducate the men and make them more or less self-supporting. Dr. John Broadus Watson, head of the psychologic department of the Johns Hopkins University, has been chosen by the American Psychological Association to work out the plan. The community workshop group is preparing to assist in this work. The Maryland Woman's War Relief Hospital will take care of the convalescent soldiers who need special care. Dr. Anna D. S. Abercrombie is the president of this organization. The Maryland Psychiatric Base Hospital is preparing to take charge of the soldiers who may become nervous wrecks as a result of the war. The Maryland Association for the Prevention and Relief of Tuberculosis will take charge of those who may contract that disease and take steps to prevent its spread. Those who are blinded or have their eyesight impaired will be looked after by the Maryland Workshop for the Blind. In addition several Red Cross groups are especially interested in this work.

Personal.—Dr. Winford H. Smith, superintendent of Johns Hopkins Hospital, has been appointed major in the United State Medical Corps, with orders to report for active duty at the office of Surgeon-General Gorgas, at the War Department in Washington, D. C. Although he will spend most of his time in Washington, Dr. Smith will continue to live at the hospital and keep in close touch with the administration. During Dr. Smith's absence, Dr. Ralph B. Seem will act as superintendent of the hospital.——Dr. William S. Thayer, Baltimore, is one of the 1908 Harvard graduates who have set out to raise a fund of $100,000, in order that the University's Reserve Officers' Training Corps may be equipped and maintained at a grade equal to that of a federal camp.——Dr. Howard A. Kelly has announced that through the generosity of Alfred I. Du Pont, Wilmington, Del., a considerable quantity of radium has been given to the Howard A. Kelly Hospital in Baltimore.——Dr. John D. Blake, health commissioner, has appointed Dr. William G. Clopton and Charles Norton as health wardens, to substitute for Major Frederick H. Vinup and Capt. Edmund A. Munoz, who have been called out as officers in the Fifth Maryland Regiment.——Dr. William George MacCallum of Columbia University has accepted the post as head of the department of pathology at the Johns Hopkins University, to succeed Dr. William H. Welch, who has given up this work to accept the direction of the School of Hygiene and Public Health. Dr. McCallum will begin his work in Baltimore in the fall.

MASSACHUSETTS

A Correction: Workmen's Compensation in Massachusetts.—In THE JOURNAL, May 12, appeared the statement that the workmen's compensation act of Massachusetts, which the governor had allowed to become a law without his signature, permitted injured workmen "in certain institutions under the provision of the workmen's compensation act to select their own physician for treatment." Dr. Arthur N. Broughton, chairman of the Committee on Workmen's Compensation Act of the Massachusetts Medical and Homeopathic Medical Society, states that the law gives free choice of physicians on the part of the workmen throughout the state, the only restriction being that the work of the physician, whether as the choice of the workman or as representing an insurance company, must be adequate.

NEW HAMPSHIRE

Bancroft Resigns.—Dr. Charles P. Bancroft, who succeeded his father as superintendent of the New Hampshire State Hospital, Concord, in 1882, has resigned, to take effect July 1.

New State Officers.—The one hundred and twenty-sixth annual meeting of the New Hampshire Medical Society was held in Concord, May 16, under the presidency of Dr. Emdon Fritz, Manchester, and the following officers were elected: president, Dr. Fred S. Towle, Portsmouth; vice president, Dr. Charles P. Bancroft, Concord; secretary, Dr. D. E. Sullivan, Concord (reelected); treasurer, Dr. David M. Currier, Newport; trustees, Drs. John M. Gile, Hanover; Herbert L. Smith, Nashua, and Charles R. Walker, Concord, and councilors, Drs. Charles S. Walker, Keene; Emery M. Fitch, Claremont; Robert J. Graves, Concord; Frank E. Kittredge, Nashua; Abram W. Mitchell, Epping; Forrest L. Keay, Rochester; Richard E. Wilder, Whitefield; Fred E. Clow, Wolfeboro; Alpha H. Harriman, Laconia, and Frederick von Tobel, Lebanon.

TENNESSEE

Personal.—Capt. Eugene R. Hochstetter, Jr., and Lieut. Douglas L. McPheeters, M. O. R. C., both of Chattanooga, have been placed on the active list, and directed to report for duty to the commanding officer at Fort Oglethorpe, Ga.

New Anatomical Building.—The cornerstone has just been laid for the new Anderson anatomical hall of Meharry Medical College, on ground opposite the George W. Hubbard Hospital. The building will cost $10,000, which represents what is probably the largest gift ever made by a representative of the colored race.

WYOMING

New State Officers.—At the annual meeting of the Wyoming State Medical Society, held in Douglas, recently, the following officers were elected: president, Dr. Robert W. Hale, Thermopolis; vice presidents, Drs. Homer R. Lathrop, Casper; Anna G. Hurd, Sheridan, and Bertha N. Hamilton, Greybull; secretary, Dr. Jesse D. Lewellen, Powell; treasurer and delegate to the American Medical Association, Dr. George P. Johnston, Cheyenne.

CANADA

Death of Major Jones.—Major H. Jones of Hamilton, Ont., in charge of the Fifth Canadian Field Ambulance, has succumbed to pneumonia, overseas, aged 46.

Death of Lieutenant-Colonel Hewetson.—The British exchanges give extensive notices of the death of Samuel W. Hewetson, lieutenant-colonel of the Canadian Army Medical Corps, aged 45. He died at London after an operation for perforative colitis. Some time ago it was reported that he was suffering from nervous breakdown and shell shock. He was born in Ontario and studied at McGill University. Soon after his graduation tuberculosis showed itself, and he became a patient under Trudeau at Saranac, remaining to be one of his assistants. He settled later at Pincher Creek, Alta., and later moved to Calgary. At the beginning of the war he was appointed A. D. M. S. of the Alberta district, and organized the Eighth Canadian Field Ambulance of which he was placed in command, proceeding overseas early in 1916.

GENERAL

College of Physicians to Meet.—The second convocation of the American College of Physicians will be held in the Hotel Nassau, Long Beach, Long Island, N. Y., June 5.

Musgrave Leaves Manila.—Dr. William E. Musgrave, Manila, has been appointed superintendent of the Children's Hospital in San Francisco, and has assumed the duties of his new position.

Pediatrists to Meet.—The American Association of Pediatrists will hold its eleventh annual meeting in New York, June 3, under the presidency of Dr. Lawrence R. DeBuys, New Orleans.

Gynecologists Meet.—The American Gynecological Society held its forty-second annual meeting at Pittsburgh, May 31 and June 1 and 2, under the presidency of Dr. Frank F. Simpson, Pittsburgh.

Anesthetists Meet.—The fifth annual meeting of the American Association of Anesthetists was held in the Hotel McAlpin, June 2, under the presidency of Dr. Walter M. Boothby, Boston.

Radium Society to Meet.—The second annual meeting of the American Radium Society, will be held at the Hotel Vanderbilt, New York, June 4, under the presidency of Dr. William H. B. Aikens, Toronto. The scientific session will be preceded by a clinic at the New York Sanitarium and succeeded by a dinner at the Vanderbilt.

Students of Epilepsy Meet.—The sixteenth annual meeting of the National Association for the study of epilepsy was held at the New Jersey State Village for Epileptics, Skillman, May 28 and 29, under the presidency of Dr. David F. Weeks, Skillman.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Mary's Free Hospital for Children, New York, $2,000 by the will of Mrs. Laura Frances Hoppack Hearn.

Dr. George S. Isham, Chicago, and his three children, the bulk of the estate of Mrs. Katharine Porter Isham, estimated at $1,000,000.

Academy of Medicine to Meet.—The forty-second annual meeting of the American Academy of Medicine will be held in New York, June 4 and 5, under the presidency of Dr. Jacob E. Tuckerman, Cleveland. Their topic for discussion is to be "Civilization in Its Effects on Morbidity and Mortality."

Dermatologists Elect Officers.—At the annual meeting of the American Dermatologists Association, held in Cincinnati, May 24 to 26, Dr. Abner Post, Boston, was elected president and Dr. Oliver S. Ormsby, Chicago, was reelected secretary-treasurer. Philadelphia was selected as the next place of meeting.

Tristate Hospital for Cripples.—The "Circle of Good Deeds of Kings Daughters of Memphis" has undertaken the establishment of a tristate hospital school in Memphis for the crippled children of Arkansas, Mississippi and Tennessee. The initial capacity of the hospital will be forty beds, and the purpose of the institution is to develop the minds of the children while their bodies are receiving the care of an orthopedic surgeon.

Cotton-Belt Surgeons.—At the annual meeting of the Cotton-Belt Railway Surgeons' Association, held at the hospital of the company in Texarkana, Texas, which was presided over by Dr. John L. Jelks, Memphis, Tenn., the following officers were elected: president, Dr. Edward H. Cary, Dallas, Texas; vice presidents, Drs. Fred T. Murphy, Brinkley, Ark.; Herschel F. Connally, Waco, Texas; John L. Jelks, Memphis, Tenn., and Thomas P. Lloyd, Shreveport, La., and secretary-treasurer, Dr. William Hibbitts, Texarkana, Texas.

Medical Milk Commission Meets.—The American Association of Medical Milk Commissions holds its eleventh annual meeting at Brooklyn, June 1-2 and 4, under the presidency of Dr. Walter D. Ludlum, Brooklyn. The National Certified Milk Contest will be conducted, for which three silver cups will be awarded, one by the association, one by the Certified Milk Producers of America and one by the Standard Cap and Seal Company. On the afternoon of June 2, a memorial service, to Dr. Henry L. Coit, the father of certified milk, was held at Mr. Francisco's Homestead, Fairfield, N. J.

National Tuberculosis Association Adopts Resolutions.—At the annual meeting of the National Association for the Study and Prevention of Tuberculosis, held in Cincinnati, May 10, resolutions were adopted offering the American Red Cross the services of the association in promoting Red Cross work; urging all public health nurses, and especially those with special training in tuberculosis, to continue to devote their energies to the local health problems; favoring national prohibition, both for soldiers and civilians, during the war period and for one year thereafter; condemning the action of the United States Department of Commerce in urging on the "patent medicine" interests of the country that they exploit China and the Chinese people as a lucrative field for business, and urging the registration and organization for the term of war of the tuberculosis workers of the country.

Conference of Charities and Correction.—At the forty-fourth annual meeting of the National Conference of Charities and Corrections at Pittsburgh, June 6-13, the social problems of the war will receive special attention. Mr. Herbert C. Hoover, chairman of the board of the National Council of Defense and of the American Council for Relief in Belgium, will deliver an address. On June 8, the relief of soldiers' families will be discussed. Economy of food and the maintenance of standards of living will be presented. Dr. Warren H. Wilson, New York, an authority on rural life problems, has prepared a program on mobilizing of rural communities. The demands of public health during the war will be voiced by a committee under the chairmanship of Dr. Charles E. A. Winslow of Yale University. Mobilization of the brain power of the nation will be the subject of an address by Dr. Stewart Paton of Princeton University. Food and drug control will be discussed by Dr. Carl L. Alsberg of the United States Department of Agriculture.

Malaria Eradication.—Dr. Frederick L. Hoffman, statistician of The Prudential Insurance Company of America, has just completed an extended trip through Louisiana in the private car of the state board of health, with Dr. Oscar Dowling, the president of the board; Dr. William H. Seemann, president of the Louisiana State Medical Society, and Dr. Henry R. Carter, senior surgeon of the United States Public Health Service, in the furtherance of the state-wide campaign for malaria eradication, improved accuracy and completeness in birth and death registration, and public health matters generally. The principal stops made were New Orleans, New Iberia, Lake Charles, De Ridder, Shreveport, Monroe, Tallulah, Baton Rouge and Alexandria. About twenty public meetings were held, including medical societies, high schools, churches, etc. A special effort was made to reach the negro population, in view of the fact that the death rate among that element of the Louisiana population, from all causes, as well as from malaria, is decidedly excessive. It is anticipated that as the result of the state-wide education, material progress will be made in the direction of malaria eradication and the required improvement in the accuracy and completeness of vital statistics, so as to qualify at least a number of parishes for admission to the United States Registration Area. Sanitary surveys were made of a number of important sections, and it is quite probable that the results of the trip and matters and data pertinent thereto will be presented in the form of an address on the occasion of the forthcoming meeting of the American Public Health Association in New Orleans.

Aid for Soldiers' Families.—The Hennepin County (Minn.) Medical Society has named a medical war board to work out a plan for giving free medical aid to the families of all men in government war service.——The physicians of Covington, Ky., have agreed to care for and protect the practices

of all physicians who enter the military service.——The Medical Society of Wyoming County, N. Y., has agreed that members called to attend cases in the practice of physicians who are in military service shall turn over one third of the fees collected to the physician or to his family.——Madison County (Ind.) Medical Society has adopted a resolution to turn over one third of the gross collections realized from the practices of the physicians called to the colors, to the physicians or dependents of these physicians.——Members of the Knox County (Tenn.) Medical Society have agreed to turn over one third of fees collected from patients, from physicians who volunteer for service in the army, to these physicians or their dependents. Similar action has been taken by the physicians of Chattanooga, Tenn.——The Monterey (Calif.) Medical Society has agreed to treat during the period of the war free of charge the dependents of men who are in the military service.——Members of the King County (Wash.) Medical Society have offered to perform free of charge all minor operations required to qualify otherwise ineligible applicants for military service, the hospital charges being paid by the patients.——Westchester County (N. Y.) Medical Society has adopted a resolution, stating that all physicians who remain at home consider it their patriotic duty and privilege to do their utmost to conserve the professional interests of their professional brethren in the military service.

FOREIGN

Physician Appointed Minister of Public Instruction in Spain.—J. E. Rodriguez, a physician of Madrid, and collaborator on the *Siglo Medico*, has been made minister of public instruction in the recent reorganization of the Spanish cabinet.

Statue of Berthelot.—A statue of Berthelot, the great organic chemist and founder of thermochemistry, the study of the action of heat on chemicals, was unveiled last month in the gardens of the College de France, Paris, where he did much of his pioneer work. He was born in 1827.

Antimalaria Mission to Macedonia.—The French military and public health authorities are organizing a special antimalaria unit to send to the Macedonia district, consisting of twenty physicians, 300 soldiers and their officers, eighteen automobile drivers and other personnel. The mission is to be in charge of Dr. Visbecq. Thirty tons of quinin is to be a part of its equipment.

Deaths in the Profession Abroad.—Lieut.-Col. **D. B. Chiles Evans,** Swansea, R. A. M. C., with No. 18 British Field Ambulance, aged 39.——Col. **J. H. E. Austin,** qualified in 1887; died at military hospital in London.——Sir **A. Ruffer,** president of the Egyptian Sanitary and Quarantine Council, one of the principal authorities on all matters relating to public health in Egypt. He was at first director of the institution at London which later became the Lister Institute, and published much on bacteriology and pathology, leaving in 1896 to be professor of bacteriology at the Cairo Medical School. He was the representative of Egypt at the sanitary conferences, and was a member of the Indian plague commission. His death is said to have occurred as he was returning from Saloniki, where he had been engaged in reorganizing the sanitary service of the provisional government of Greece.—— **T. Salazar,** professor of therapeutics at the University of Lima, aged 87. On account of his unusually long incumbency of the chair of therapeutics he has seen the ebb and flow of more tides in medicine in the course of his instruction than falls to the lot of most professors.——**A. Corona,** professor of experimental physiology at the University of Parma, aged 65.——**R. del Castillo y Quartiellers** of Madrid, former senator, chief of the civil administration and the founder of the Instituto Medico-Quirurgico Encarnacion.

Recent Deaths in the Profession in England.—**S. D. Rowland,** bacteriologist of the Lister Institute, London, but during the war Major Rowland has been in charge of No. 1 Mobile Laboratory. His ingenuity in fitting up this laboratory made it the model for others subsequently sent out. In 1915 he organized and carried out a house-to-house search for typhoid carriers in the civil population of the area of British operations. It was while conducting a search for meningococcus carriers recently that he contracted cerebrospinal meningitis himself and succumbed, aged 45. In 1905 he was sent to Bombay to study means of prevention of bubonic plague and spent two years there. His monographs published in the *Journal of Hygiene* on vaccination against different diseases are said to be the most thorough and quantitative researches in this domain of immunology.——**M. J. Whitty,** lieutenant-colonel and chief medical recruiting officer for the Liverpool district, aged 54. He was of old Irish stock of which many generations had given brilliant men to the army.——**L. K. H. Hackman** of Portsmouth, England, medical officer in charge of the staff and departments and families of the Portsmouth garrison (England). He was also instructor of the police officers and constables in first aid duties.——**C. Stiebel,** killed in action, aged 40. He was a medical missionary of the Salvation Army in India for some years, having charge in turn of two of their hospitals. Since the war began he has served in hospitals in England and in Mesopotamia.——**R. H. Kinsey,** chairman of the ethical committee of the British Medical Association, member of the town council of Bedford, England, aged 77.——**F. P. Lansdown,** a prominent surgeon of Bristol, aged 83. His father, himself and his son have served in turn as surgeon to the Bristol general hospital.

LONDON LETTER

LONDON, May 7, 1917.

The War

THE FOOD PROBLEM

A vigorous campaign to promote economy in the use of food is being carried on so as to counteract, as far as possible, the destruction of food by the submarines. Meetings are held all over the country at which the need for reduced consumption and the elimination of waste is enjoined. Bread is the most important and the most difficult problem, for the situation is aggavated by a shortage of the world's yield of cereals. A proclamation by the king has been read in the churches pointing out that abstention from all unnecessary consumption of grain is the most effectual means of defeating the enemy. He exhorts all who have the means of procuring articles of food other than wheaten corn to practice the greatest economy and frugality in the use of every species of grain, and charges all heads of households to reduce the consumption of bread in their families by at least one fourth, to abstain from the use of flour in pastry, and to restrict, or wherever possible to abandon, its use in all other articles than bread. He exhorts those who keep horses to abandon the practice of feeding them on oats or other grain. It is interesting that an almost identical proclamation was issued by George III in the year 1800, the time of the Napoleonic wars. An order is to be issued making the waste of any kind of food penal. The threatened shortage of grain has brought about a reform which previous methods failed to do. A few years ago an agitation was carried on in the press in favor of what was called "standard bread," that is, bread containing the wheat germ, which it was the practice to remove to satisfy the public craze for a white loaf, but it was not a great success. Now the millers are compelled to extract a high percentage from the grain (as stated in previous letters), and therefore the dark looking loaf, which alone is available, is a much more nutritious food.

This was pointed out by Captain Bathurst, parliamentary secretary to the ministry of food, at a meeting of the Royal Society of Arts. He said that it was probable that the relative availibility and economic use of bread here and in Germany would prove the determining factor of the war. National necessity had forced on the public mind the important issue of what constituted bread properly so called, which reformers had so long preached to the unheeding and skeptical. As long ago as 1882, Mr. Stephen Terry pointed out that there were four coatings to the wheat berry, and that all except one, the bran, contained elements fit for human consumption and necessary for human efficiency. We should be careful how we interfere with any of Nature's gifts and destroy her provision by reason of prejudice or from purely esthetic considerations, such as prevailed in the production of white bread. War bread was almost a complete human food, and when combined with either butter or margarin formed a complete food. This certainly was not true of the anemic loaf in use before the onset of war.

INDUSTRIAL EFFICIENCY AND FATIGUE IN MUNITION WORKERS

The Health of Munition Workers Committee has issued an interim report on efficiency and fatigue. Workers complain of "staleness," which is due almost solely to persistent long hours and deprivation of weekly rest. The committee thinks that proper attention earlier in the war to the need for weekly rest would have prevented a large part of the diminished capacity of this kind, and averted wasteful expediture on

imperfect work. For the avoidance of "staleness" in conditions of strenuous labor it is not enough to treat the workmen in the bulk and to regulate daily and weekly rests on an average; individual workmen must be considered. In many cases a single day off at the right time would have avoided wasteful reduction of capacity. In a sudden national emergency, the accumulation of fatigue and its results in workers might temporarily be disregarded; but now, though the special need persists, the race is to be a long one, and failure to conserve the maximum efficiency of the workers must be disadvantageous. Attempts to stimulate them to feverish activity in the supposed interests of the country are likely to be as damaging to the desired result as the cheers of partisans would be if they encouraged a long-distance runner in futile sprinting early in his race.

Report of the Radium Institute

An important report of the Radium Institute for the two years ending last December has just been issued. The policy of refusing to treat operable malignant disease, except rodent ulcer, and cases in which the patient positively declines operation, has been followed. In epitheliomas of the buccal, laryngeal and pharyngeal mucous membranes, temporary improvement was frequently obtained; but the final result was disappointing. Of fifty-eight such patients treated to a conclusion, sixteen were dead at the time of the report, thirteen were not improved, twenty-five were improved, and four were apparently cured. In addition, thirty patients abandoned treatment, and fourteen were examined but not treated. In some rare instances, isolated nodules in the tongue responded well to burying in them a tiny powerful emanation tube of 50 mg. or more initial activity, screened with 1 mm. of silver or 3 mm. of platinum for a period of from eighteen to twenty-four hours. Brisk reaction, fibrous changes in the nodule, and arrest of the diseases followed. Under this method, small circumscribed growths in the soft palate did well; and of all epitheliomatous lesions in the mouth or fauces, these are regarded as the most suitable for radium therapy. Of six patients with vaginal epithelioma, four were apparently cured, one was improved, and one was not improved. Primary epithelioma of this region usually reacted well to prolonged exposures with powerful applicators heavily screened, and if of recent origin and without such surrounding induration, were often completely removed. In inoperable carcinoma of the uterus, striking symptomatic improvement was almost invariable—arrest of hemorrhage, diminution of discharge, healing of ulceration, reduction of infiltration, diminution of rate of growth, and amelioration of pain. Some cases previously declared to be inoperable became operable.

The treatment was repeated at intervals of six weeks or two months. A 50 or 100 mg. tube, screened with 2 mm. of lead and three mm. of rubber, is introduced into the cervical canal, or, if this is impracticable, into the posterior fornix. A powerful flat applicator containing from 80 to 100 mg., similarly screened, is placed on the abdominal wall over the fundus. The exposure is from thirty to sixty hours, spaced over from five to ten days. When the disease is confined to the cervix and the growth is of the fungating type, preliminary curetting is recommended. In carcinoma of the rectum the results varied greatly. The best results were obtained in persons over 50 in whom the growth was annular, vascular, and situated in the upper half of the rectum. The plaque-like growth with much surrounding infiltration was rarely improved. In annular, vascular and exuberant growths with a tortuous and constricted lumen, radium often relieved the threatened obstruction. But sooner or later, both in this type and in spongy growths, fibroid contraction occurred, necessitating colostomy or dilation. When the growth is extensive and ulcerated, colostomy is recommended before radium treatment, both to prevent pain and, when the growth is high, to enable the upper portion to be treated by the passing of a tube through the colostomy aperture down the sigmoid. Of fifty-one patients with cancer of the rectum treated to a conclusion, thirty-three were improved, ten were not improved, eight died, and fourteen abandoned treatment.

In cancer of the breast it is held that radium should never be used in the early stage as a substitute for operation. In rapidly growing medullary cancer, radium had little effect, but in slow cases of the atrophic type it checked the disease, arrested ulceration, and even caused it to heal, diminished induration and lymphatic engorgement, and relieved pain. Frequently it caused disappearance of small cutaneous nodules and reduced infected glands. Of 111 patients treated to a conclusion, six were apparently cured, sixty-seven were improved, twenty-four were not improved, and fourteen died. Rodent ulcer which had not been subjected to previous treatment with Roentgen rays, carbon dioxid snow, or ionization, did not affect mucous membrane, bone or cartilage, and did not exceed 3 cm. in diameter was almost invariably cured by one treatment. A full strength applicator is used unscreened and an exposure of from one and a half to three hours is given, the time being determined by the amount of induration and infiltration. The number of patients with rodent ulcer treated to a conclusion was 169; 122 were apparently cured, thirty-seven improved, eight were not improved, two died, and six abandoned treatment. In sarcoma before dissemination into the viscera, the results were usually good. Vigorous treatment—burying emanation tubes in the growth and applying externally powerful screened apparatus—is recommended. In lymphosarcoma the response was remarkable, the growths commencing to shrink in a few days after termination of the treatment and rapidly disappearing. In fibroid disease of the uterus in which ordinary methods failed to relieve hemorrhage and the patient declines operation, radium is held to be worth a trial. It will almost certainly diminish or abolish hemorrhage and will sometimes produce considerable diminution of the uterus. In lupus vulgaris which has not responded to the Finsen light, radium offers a fair prospect if used vigorously. Lupus erythematosus frequently responded. In obstinate pruritus, associated with leukoplakia or hyperkeratosis, radium was often of great use, but not when there was no lesion and the trouble was purely nervous. In arthritis deformans the daily administration of 250 c.c. of radium emanation solution of a strength of not less than 1 millicurie per liter often produced remarkable improvement, especially in persons under 40, in whom the disease had been of short duration and of infective origin, the changes being periarticular and affecting many joints.

PARIS LETTER

PARIS, May 3, 1917.

Personal

The Academy of Sciences recently held an election to fill the vacancy occasioned by the death of Bouchard. E. Quénu, professor of clinical surgery of the Faculty of Medicine of Paris and member of the Academy of Medicine, was elected on the second ballot, receiving thirty-one votes, against fourteen for Pozzi and five for Bazy. Quénu is known for his work in surgery. Since the beginning of the war he has taken an active part in solving the great problems of war surgery, notably in his successful advocacy of intervention in abdominal wounds.

Death of Dr. Frédéric Labadie-Lagrave

Dr. Frédéric Labadie-Lagrave, former physician of the hospitals of Paris, died at the age of 73. He was a clinician of repute and published many works, notably a treatise on gynecology, written in collaboration with Professor Legueu.

The War

MEATLESS DINNERS

The decree of April 14 regulated the sale and consumption of meat by instituting two meatless days each week, but difficulties of transportation due to military operations, as well as difficulty in obtaining a sufficient quantity of vegetables on account of the rigor of the weather, obliged the minister of food control to modify this restriction. A new decree has been signed, therefore, which requires that the butcher shops, as well as retail meat markets of all sorts, shall be closed at 1 o'clock every day, and the sale of fresh, frozen, salt or preserved meats is interdicted during the closed hours. Beginning April 25, the consumption of meat, whatever be its form of preparation, is interdicted at and after 6 p. m., except on Sunday. In consequence, in all establishments open to the public (hotels, boarding houses, restaurants, buffets, wagon restaurants, cafés, etc.) they must not inscribe on their menus or serve any meat or dish containing meat, including poultry, rabbit or game. The minister of food control, however, has abrogated the rule of January 25 which instituted the regimen of "two dishes" (only one of meat) in the restaurants.

IS THORACOTOMY INDICATED TO ARREST HEMORRHAGE RESULTING FROM WOUNDS OF THE CHEST?

In a previous letter I referred to a report made by Dr. Pierre Duval of fourteen cases of urgent surgery in cases of

wounds of the lung. In ten of these a cure was obtained; therefore, Duval concludes that surgical intervention is indicated in these cases, particularly to arrest a pulmonary hemorrhage which threatens the life of the patient. This question was the subject of discussion at a meeting of the Surgical Society of Paris. R. Grégoire, A. Courcoux and G. Gross related their experiences at one of the hospitals at the front. During a period of twenty-nine months they saw 404 cases of wounds of the chest, and as a result of their observations they stated that hemostatic operations in cases of traumatic pleural effusions are rarely indicated. Without doubt there are cases in which early intervention is not only indicated but even demanded, and in which such an operation is possible as well as practicable. Some of these patients die at the first aid stations and in the distributing hospitals. The cases that are suited for this operation are those that are seen at the base hospitals, and here such an urgent operation is only exceptionally required. In the 404 cases reported the operation was necessitated only five times. These wounded sometimes die before they can be given help. Can the surgeon determine whether or not the patient is bleeding? Neither the shock nor the height of the effusion are sufficient signs. Three phenomena indicate that the hemorrhage is still active: (1) If blood is still flowing, the fluid obtained by puncture will coagulate in the syringe; (2) the symptoms of mediastinal compression steadily become more embarrassing; (3) the symptoms of shock continue to develop, notwithstanding the treatment. When these signs and symptoms are present, immediate intervention is indicated, but these cases are but rarely seen by the surgeon.

Hartmann did not concur with Duval, basing his opinion on personal observations made in the surgical automobile hospitals. It is true that at Grégoire's hospital it is not practicable to perform a thoracotomy for the purpose of arresting hemorrhage. There were thirty-seven deaths among 290 cases (12.7 per cent. mortality). On the other hand, at the hospital at which Duval is stationed, the mortality was 18 per cent. (thirty deaths among 163 cases). At Jeanbrau's hospital there were sixty deaths among 223 cases of wounds of the chest, but twenty-three of these deaths were caused by other lesions (multiple wounds, wounds of the brain and spinal cord, and wounds of the thorax and abdomen) leaving 200 cases of chest wounds with thirty-seven deaths, or 18 per cent., mortality, the same as at Duval's hospital. Because of these findings, Hartmann asked whether the good results following the nonoperative treatment of these hemorrhages were not due to the fact that the surgeons at the surgical automobile hospitals receive only the selected cases; whether the indications for surgical intervention were not more often present there than in the hospitals of the first line. These patients are often received late, as he has been able to confirm. Of eighty-five patients arriving within a given time, twenty-five were received dead. Six of these died of multiple wounds: one each of a wound of the brain, of the spinal cord, a thoraco-abdominal injury, and complete section of the vessels and nerves of the arm; two died suddenly, although only a slight hemothorax was present. One died from a severe fracture of the scapula and ribs, and four from large destructive wounds of the thorax. In one case there were no details given as to the cause of death. Only one patient, who died after about twelve hours from a hemopneumothorax, could, perhaps, have been benefited by the operation. Of the surviving sixty patients, not one presented any grave symptoms as the result of the hemorrhage. In one other first line hospital there were, in a given period, fifty-nine cases of chest wounds with eight deaths, three from pneumonia, one each from pulmonary congestion, a pleuropulmonary infection, pleurisy, septicemia and syncope, the last-mentioned occurring at the time an exploratory puncture was made (at the necropsy 700 gm. of fluid were found in the pleural cavity). In the fifty-nine cases there was at no time any indication for surgical intervention to check the bleeding, and not one of these patients died from hemorrhage. An examination of 534 cases of chest wounds, in which the patients were received at the surgical automobile hospitals and the first line hospitals during one of the battles, leads to the conclusion that thoracotomy as a primary operation to arrest pulmonary hemorrhage is correct in theory, but practically it is not to be considered.

Pierre Duval reported an additional series of thirteen cases with operation since his first report. Eight of these patients were operated on to check a threatened hemorrhage; three died and five were cured. Duval is convinced that this is indicated in all cases of open wounds of the thorax and in all cases of immediate grave hemorrhages. Thoracotomy with suture of the lung will save two thirds of these patients. The operation on the lung is also indicated in cases of fracture of the ribs accompanied by wounds of the lung. In these cases spicules of bone nearly always puncture the lung, and cause an immediate grave hemorrhage with subsequent suppuration of the pleura and lung, occurring more or less rapidly. The indication to remove such bone fragments must be met promptly.

At one of the last meetings of the Paris Medical Society, Dr. Maisonnet presented some statistics of cases he had observed while attached to one of the hospitals of the first line in Artois. He has had only one case of wounding of both lungs, and this case terminated fatally. Among 104 cases of wounds of one lung there were eleven deaths, all occurring within the first forty-eight hours. In no case was there found at the necropsy a vascular lesion which would account for the bleeding. Furthermore, he has never been of the opinion that the patient died of a division of the vessels. He has had four deaths from the seventh to the tenth day of pneumonia, six deaths after the tenth day (three from empyema, one from liver cirrhosis, one from meningitis incident to a cranial lesion, and one from pneumonia). The total mortality at this hospital was 20 per cent. If one adds to these deaths the rapid deaths occurring before the arrival of the wounded at the various base hospitals (from large, open wounds of the thorax and severe hemothorax), one sees that the mortality of wounds of the chest is considerable.

Hartmann concluded, from the experience of Maisonnet, Grégoire, Courcoux and Gross, as well as his own, that the indication for thoracotomy to arrest hemorrhage is never present. Furthermore, one can wonder at the frequency with which Duval has encountered it. Perhaps the men with hemorrhages would be benefited by early intervention at properly equipped first aid stations. In the hospitals of the first line, and more so in the surgical automobile hospitals situated farther back, the results obtained have shown that absolute immobilization gives results superior to those obtained from operative intervention. The cases of severe hemorrhage have usually proved fatal before the patient arrived at these hospitals.

MECHANOTHERAPY AND REEDUCATION

The National Union of Cripples has opened an inquiry on the status of mechanotherapy in France, and has appointed a committee of which the president will be Eugène Rochard, general secretary of the Surgical Society of Paris. It seems that at present the health service is interested only in giving professional reeducation. Rochard thinks that aside from this, mechanotherapy ought not be neglected. This concerns notably men injured by fractures and who are liable, during treatment, to ankyloses or muscular atrophies, and who in their working capacity will be in a state of inferiority as compared with their noncrippled fellows. They may recover in a great majority of cases and be returned to their combatant units, or be restored to their full working capacity. Mechanotherapy alone can attain this result. Rochard thinks that the question of mechanotherapy has been badly handled from the beginning of the war. In the first place, the proper way would have been to appoint a commission of surgeons who would have studied all existing apparatus, chosen the best among them and advised their adoption by the health service. Instead of that, they employed, without preliminary inquiry, apparatus badly conceived, awkward, and not effective for its purpose. This has resulted in neglect of the method, and mechanotherapy is discredited. It is time yet to return to this practice, which alone can restore the motility of ankylosed articulations, and the activity of atrophied muscles.

INTERALLIES CONFERENCE ON THE DISABLED

This conference, sitting in the Grand-Palais, May 8 to 12, inclusive, will be presided over by the President of the Republic. The six questions to be discussed are: (1) physical reeducation; (2) professional reeducation; (3) the placement and economic establishment of cripples; (4) the economic and social interests of the crippled; (5) the blind, the deaf, and those invalided by central nervous troubles, and (6) publications and propaganda. In addition to attendance on the sessions, visits will be made to the school for professional reeducation of Paris, to the National Professional Institute for Invalids of the War at Saint Maurice, and to the Belgian Military Institute for Professional Reeducation of Port-Villez (Eure).

Marriages

WILLIAM TARVIN FENKER, M.D., State Soldiers' Home, Ohio, to Miss Lillian Cheetham of New Straitsville, Ohio, at Monroe, Mich., May 5.

EDGAR HAMILL HUGHES, M.D., Northampton, Mass., to Miss Florence A. Martindale of Camden, N. J., at Holyoke, Mass., May 21.

RALPH WAITE DENNEN, M.D., Waltham, Mass., to Miss Margaret May Alexander of East Boston, Mass., May 10.

THEODORE WILLIAM NEUMANN, M.D., to Miss Florence Middleton Pilgrim, both of Poughkeepsie, N. Y., April 30.

DANIEL DAVIS, M.D., Baltimore, to WILLA MAE FRICKE, M.D., of Rochester, Minn., at Wausau, Wis., May 17.

JACOB LEON HERMAN, M.D., Philadelphia, to Mrs. Leonora Owsley Ackley, in Norristown, Pa., May 12.

ALLEN G. CALDWELL, M.D., Covington, Ky., to Miss Antoinette Yeager of Cincinnati, May 12.

BALDUIN HARMANN LUCKE, M.D., Philadelphia, to MARIAN HAGUE REA, M.D., Boston, March 2.

Deaths

Joseph Carter Hearne, M.D., San Diego, Calif.; Jefferson Medical College, 1872; aged 66; a Fellow of the American Medical Association and a member of the Pacific Association of Railway Surgeons; local surgeon of the Sante Fe System; a veteran of the Civil War; formerly chief surgeon of the Hannibal and St. Joseph Railroad, and secretary of the Missouri State Board of Health; president of the San Diego City Board of Health and surgeon to the Pacific Coast Steamship Company; died at his home, May 9.

Charles A. von Hoffman, M.D., San Francisco; University of Leipzig, Germany, 1875; aged 65; a Fellow of the American Medical Association; emeritus professor of gynecology in the University of California; gynecologist to St. Luke's Hospital; obstetrician to the Maternity Cottage; consulting gynecologist to the German Hospital and consulting physician to the San Francisco Lying-In Hospital and the Florence Crittenton Home; died at his home, May 13, from cerebral hemorrhage.

Frank Albert Applegate Stoney, M.D., Brooklyn; Long Island College Hospital, 1897; aged 42; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; a member of the staff of the Bay Ridge Hospital; formerly division chief in the bureau of contagious diseases of the New York Department of Health, and chief of the tuberculosis clinic; died at Seaton Hall, Lakewood, N. J., May 13, from heart disease.

John Carpenter Schapps, M.D., Butte, Mont.; Bellevue Hospital Medical College, 1880; aged 60; a Fellow of the American Medical Association; a member of the American Orthopedic Association and once first vice president of the Medical Association of Montana; formerly orthopedic surgeon to St. Mary's and Kings County hospitals, Brooklyn; orthopedic surgeon to the Murray Hospital and Paul Clark Home, Butte; died at his home, May 16.

James Harvey Spruance, M.D., Wilmington, Del.; Jefferson Medical College, 1889; aged 50; formerly a Fellow of the American Medical Association; a member of the Delaware State Medical Society; formerly mayor of Wilmington; a member of the state legislature, state board of pharmacy and local board of education; died at his home, May 16, from pneumonia.

Charles Dake Crank, M.D., Cincinnati; Hahnemann Medical College, Philadelphia, 1871; aged 73; emeritus professor of pediatrics and one of the founders of Pulte Medical College, Cincinnati; attending physician to the Cincinnati Orphans' Hospital and a member of the staff of the Bethesda Hospital; chief of staff of the Home for the Friendless and Foundlings; died at his home, about May 7.

Robert Ream, M.D., Maryville, Mo.; Missouri Medical College, St. Louis, 1895; aged 47; for many years a druggist; died at the home of his brother in Van Wert, Ohio, March 5, from a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health.

William Hassert Biggam, M.D., Brooklyn; College of Physicians and Surgeons in the City of New York, 1881; aged 61; formerly a Fellow of the American Medical Association; gynecologist to the Eastern District Hospital and visiting physician to the Home for the Aged, Brooklyn; died in that city, May 9, from heart disease.

Samuel Watson Acton, M.D., Trussville, Ala.; University of Alabama, Mobile, 1860; aged 83; formerly a Fellow of the American Medical Association; a member of the Medical Association of the State of Alabama; surgeon in the Confederate service during the Civil War; died at his home, May 6.

Otto W. A. Schirmer, M.D., New York; University of Greifswald, Germany, 1888; aged 52; professor of diseases of the eye in the New York Post-Graduate Medical School; ophthalmologist to the Knapp Memorial, St. Mark's and Bronx hospitals; died in the Polyclinic Hospital, New York, May 6.

James Edward Taylor, M.D., Ovid, Mich.; Western Reserve University, Cleveland, 1886; aged 55; a Fellow of the American Medical Association, and once president of the Clinton County Medical Association; health officer of Ovid village and township; died at his home, May 13, from heart disease.

Nathan Johnson, M.D., Fitchville, Conn.; New York University, New York, 1878; aged 66; health officer and medical examiner (coroner) of Bozrah Township since 1892; for several years a member of the Fitchville Board of Education; died at Bozrah, Conn., April 17, from arteriosclerosis.

Samuel Warren Holloway, M.D., Louisville, Ky.; Louisville Medical College, 1891; aged 49; formerly assistant in surgery and clinical surgery in the Kentucky School of Medicine, Louisville; died at the home of his mother in Louisville, April 19, from intestinal obstruction.

William C. Rohu, M.D., Chicago; Bennett Medical College, Chicago, 1891; aged 64; formerly a Fellow of the American Medical Association; for seventeen years in charge of the dispensary of the Passavant Memorial Hospital, Chicago; died at his home, May 20, from diabetes.

Louis N. Wells, Chicago (license, Indiana, 1897); aged 77; formerly a member of the Indiana State Medical Association; for many years a practitioner of De Motte, Ind.; a veteran of the Civil War; died at the home of his sister in De Motte, May 3, from cerebral hemorrhage.

John Lorenzo Davison, M.D., Toronto, Ont.; Trinity Medical College, Toronto, 1884; M.R.C.S. (Eng.), 1885; at one time professor of clinical medicine in the University of Toronto; died at the home of his brother in Napanee, Ont., April 27, from heart disease.

Henry A. Willis, M.D., Whitehall, S. C.; Medical College of the State of South Carolina, Charleston, 1897; aged 46; a member of the South Carolina Medical Association and surgeon of the Savannah River Lumber Company; died in a hospital in Charleston, April 30.

Cyril P. Brown, M.D., Spring Lake, Mich.; Rush Medical College, 1870; aged 72; formerly a Fellow of the American Medical Association; a member of the Michigan State Medical Society; a veteran of the Civil War; died at his home, May 4, from pneumonia.

Walter Demarest, M.D., New York and Chicago; College of Physicians and Surgeons in the City of New York, 1878; aged 62; well known as an organist; died in the New Jersey State Hospital, Morris Plains, May 5, after an invalidism of twenty-three years.

Hyman Solomon Shlevin, M.D., Brooklyn; Yale University, New Haven, Conn., 1892; aged 52; a member of the Medical Society of the State of New York; died from cerebral hemorrhage, May 12, while working under his motor car in front of his home.

Jeremiah Wilson, M.D., Morehead, Ky.; Kentucky School of Medicine, Louisville, 1889; aged 64; health officer and county physician of Rowan County, Ky.; local surgeon to the Chesapeake and Ohio System; died at his home, April 25.

James W. Teams, M.D., Ridgeway, S. C.; Medical College of the State of South Carolina, Charleston, 1894; aged 44; a member of the South Carolina Medical Association; died at his home, February 24, from nephritis.

John W. Spear, M.D., Mason City, Ill.; Rush Medical College, 1875; aged 68; a Fellow of the American Medical Association; for many years local surgeon for the Illinois Central Railway; died at his home, May 5.

Alexander Loew, M.D., Chicago; University of Vienna, Austria, 1868; aged 70; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; died at his home, May 11.

William Fremont Hubbard, M.D., Portland, Ore.; University of Michigan, Ann Arbor, 1893; aged 61; a Fellow of the American Medical Association; a specialist in the diseases of women; died at his home, May 6.

Harriet Noble Watson, M.D., Albion, N. Y.; New York Medical College and Hospital for Women, New York, 1878; a member of the Medical Society of the State of New York; aged 81; died, May 2.

Theophilus H. East, M.D., La Junta, Colo.; University Medical College, Kansas City, Mo., 1900; aged 63; died in La Junta, March 19, from surgical shock following a laparotomy.

Hall Staples, M.D., West Acton, Mass.; Dartmouth Medical School, Hanover, N. H., 1892; aged 46; a member of the Massachusetts Medical Association; died at his home, March 7.

James E. Brennan, M.D., Louisville, Ky.; Louisville (Ky.) Medical College, 1890; aged 49; formerly a member of the Kentucky State Medical Association; died at his home, April 26.

Frederick William Colman, M.D., Lodi, Calif.; Cooper Medical College, San Francisco, 1873; aged 78; formerly health officer of Lodi; died at his home, April 24, from senile debility.

James B. Orwig, M.D., Toledo, Ohio; Cleveland Homeopathic Medical College, 1899; aged 42; formerly consulting physician to the Oil City (Pa.) Hospital; died at his home, May 10.

Alfred James Hamilton, M.D., Cassville, Pa.; University of Michigan, Ann Arbor, 1870; aged 71; formerly a member of the Michigan State Medical Society; died at his home, May 6.

Orlando E. Black, M.D., Wilsonville, Ala.; University of the South, Sewanee, Tenn., 1900; aged 41; a Fellow of the American Medical Association; died at his home, March 13.

William David McIlmoyle, M.D., Bracebridge, Ont.; University of Toronto, Ont., 1908; aged 32; died February 21, twenty-four hours after an operation on the tonsils.

Courtney T. Allen, M.D., Dorchester, N. B.; College of Physicians and Surgeons, Baltimore, 1903; aged 38; died at his home, February 19, from cerebral hemorrhage.

Benjamin Franklin Freeman, M.D., Ridgeville, Ind.; Medical College of Indianapolis, 1898; aged 39; died at his home, April 1, from chronic parenchymatous nephritis.

James A. McPherson, M.D., Grand Rapids, Mich.; Detroit Medical College, 1872; aged 69; a Fellow of the American Medical Association; died at his home, May 5.

Hiram Becker, M.D., Albany, N. Y.; Albany Medical College, 1864; aged 76; for many years a practitioner of Slingerlands, N. Y.; died at his home, May 6.

Donald Alexander McCrimmon, M.D., Ripley, Ont.; McGill University, Montreal, 1860; aged 81; died at his home, March 2, from chronic interstitial nephritis.

Claude Lucas Wilson, M.D., Middletown, Conn.; College of Physicians and Surgeons in the City of New York, 1899; aged 45; died at his home, April 25.

Herbert Eugene Aldrich, M.D., Philadelphia; Hahnemann Medical College, Philadelphia, 1883; aged 60; died at his home, May 10, from heart disease.

Don E. Ashley, M.D., Guys Mills, Pa.; Western Reserve University, Cleveland, 1871; aged 71; died at his home, May 8, from cerebral hemorrhage.

William Thomas Burdick, M.D., Tolesboro, Ky.; Syracuse (N. Y.) University, 1875; aged 67; died at his home, April 17, from cerebral hemorrhage.

Frank Henry Flood, M.D., Elmira, N. Y.; New York University, New York, 1873; aged 65; formerly mayor of Elmira; died at his home, May 9.

Carl Paul Rafael Cramer, M.D., Cedar Grove, Ind.; Eclectic Medical Institute, Cincinnati, 1910; aged 47; died at his home, May 5.

Lenore Perky Webster, M.D., Washington, D. C.; Hahnemann Medical College, Chicago, 1890; aged 59; died at her home, May 3.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

TANLAC TESTIMONIALS

Dead Men and Live Newspapers Endorse a Humbug

Most of our readers are familiar with "Tanlac." The flamboyant advertisements of this nostrum are particularly in evidence in those parts of the country where the sale of alcoholics under their own names is prohibited by law. The stuff has been analyzed in the Association's laboratory and the chemists' report when stripped down to essentials was to the effect that Tanlac is a wine containing 17 per cent. alcohol to which had been added some bitters, a small amount of laxative and some glycerin. Mr. Samuel Hopkins Adams has at different times paid his respects to Tanlac, and one of his articles has been reprinted in connection with the other matter dealing with Tanlac appearing in our pamphlet "Miscellaneous Nostrums." More recently Mr. Adams again reverts to Tanlac, and in the New York *Tribune* for April 29 he tells how the Tanlac concern hired as its legal counsel the president of the Atlanta (Ga.) Ad Men's Club. He tells further how this individual, one P. C. McDuffie, appeared before the Shreveport (La.) Ad Club to defend the nostrum which the Shreveport Ad Club's Vigilance Committe had hit by declaring its advertising to be "misleading, deceptive and spurious."

Mr. Adams, in telling the story which appeared in the *Tribune* for April 29, 1917, said in part:

"Who are the true friends of a quack medicine? Not those who extol its benefits through testimonials in the public prints. Their eulogies are commonly the toll paid by ignorance to flattery or trickery; sometimes the return for bribery. In time the eulogists learn (if they live long enough) that the nostrums which they commend have done them no good. But the behind-the-scenes testimonial writers, those who lend their influence and support to quackery when it is on its defense, never supposing that they will be publicly held to account for their shameless name-peddling—these are the patent medicine faker's true friends. In this category are listed the newspapers and, in rare instances, the advertising club officials who, in exchange for the money of the frauds, deliver their impressive but worthless guarantees of good faith. For them the old, cynical slogan of the led captain and the purchased pen stands sufficient and expressive: 'Whose bread I eat, his song I sing.'

"It is my pleasant privilege here to draw forth from their modest retreat in the shadows and to set out in the light of plain print the chorus of those who have been singing, with purchased voices, the song of that famous fake medicine, Tanlac. Here is the roll of dishonor:

The Atlanta *Constitution*	The Memphis *Commercial Appeal*
The Atlanta *Journal*	The Memphis *News Scimitar*
The Birmingham *Age-Herald*	The Montgomery *Advertiser*
The Birmingham *News*	The Montgomery *Journal*
The Birmingham *Ledger*	The Nashville *Banner*
P. C. McDuffie, President of the Atlanta Ad-Men's Club	The Shreveport *Times*

"According to its claims, Tanlac is a 'magic medicine.' Its magic is derived from the great wizard, Alcohol. It's a disguised booze, and barely disguised at that, except on the label. It purports to be the 'discovery' of one L. T. Cooper. Cooper is a confessed and convicted fraud, having pleaded guilty to an indictment in Kentucky, three years ago, when he was nostrum-pedling in that state. Since then he has been doing a tremendous Tanlac business through the South, the principal outlet being G. F. Willis, the Southern distributing agent, with headquarters at Atlanta, Ga. The *Tribune* has already illuminated some of Willis' activities. It was he who put out a manufactured testimonial from a Chattanooga woman, on whom Tanlac 'wished' in print not only an assortment of ills from which she had never suffered but also a family of children which she never had! Subsequently he attempted to impose a press consorship on the

Mobile *Tribune*, which was exposing his fake; and for a time succeeded in keeping real facts about Tanlac out of print through an injunction, which, however, was vacated by Judge Henry D. Clayton. Instead of suffering injury from the attack made on it by the quack concern, the Mobile *Tribune* gained such prestige from its courageous fight for freedom of the press that it shortly after blossomed out from a weekly into a daily paper."

Holyoke Daily Transcript.

HOLYOKE DAILY TRANSCRIPT FRIDAY MAY 11 1917—TWENTY PAGES.

THREE IN ONE FAMILY MAKES UNUSUAL CASE

South Hadley Falls Man Relieved of Stomach Trouble Since Taking Tanlac, Also Mother and Sister

"I HAVE GAINED 10 POUNDS"

Says Fred Wicks, "and My Wife and Son Are Also Taking Tanlac and Have Been Greatly Benefited."

Health is wealth. Health is the greatest wealth in the world—the soundest capital, the biggest asset. Without health the bloated bond holder is a pauper. With health the plodding laborer is rich. All the money in the world cannot buy this asset of health that is absolutely necessary for success of any kind. The man without health is broken before he begins his fight. He does not even qualify for a fight. He is turned from the ring trying.

Mr. Fred Wicks of 46 Granby Road, South Hadley Falls, Mass., had been relieved of stomach trouble and has added ten pounds to weight since taking Tanlac. His wife and son are also taking it and have been greatly benefited. Mr. Wicks made and signed the following statement at Chicago:

FUNERALS

WICK—The funeral of Fred Wick was held this morning from his home, Granby Road, South Hadley Falls, followed by a high mass of requiem in St. Patrick's church. Rev. J. E. Reilly officiated. The bearers were Jacob and John Miller, Charles Todt, Charles P. O'Connor, John St. John and James Kelly. The burial was held in the St. Jerome cemetery.

Reduced facsimile of two clippings from the Holyoke Daily Transcript, May 11, 1917. On the left the Tanlac advertisement tells the public that Mr. Fred Wick "has been relieved of stomach trouble"; on the right the reader is advised that "the funeral of Fred Wick was held this morning . . ."

Mr. Adams then tells how the Vigilance Committee of the Shreveport Ad Club investigated a testimonial purporting to have been the signed statement of a Mrs. Pipes of Shreveport. The testimonial was to this effect:

"I was in bed for weeks . . . but I'm a well and happy woman today and I owe it all to your Tanlac. It would be hard to describe all my dreadful sufferings for ten years. . . . No one seemed to understand my case and no treatment or medicine helped me until I got Tanlac. . . . All my family and friends are delighted over my recovery."

The facts were that at the time this testimonial was published in the Shreveport papers Mrs. Pipes was suffering from cancer of the breast which had reached a hopeless stage. She has since died. As Mr. Adams says:

"And while her life was being eaten away by the dreadful scourge the Tanlac ghouls in Atlanta were making capital out of her agony and writing in above her alcohol-wheedled signature references to her 'recovery' and the assertion 'I'm a well and happy woman today.'"

These facts, learned by the Vigilance Committee of the Shreveport Ad Club, were but part of the evidence it had accumulated which caused it to denounce the Tanlac advertising. Some further evidence in the committee's possession was also the facts of "a Cincinnati testimonial for Tanlac published several days after the testimonial giver had died of the condition of which Tanlac had 'cured' him."

The unenviable publicity thus given Tanlac in Shreveport caused, apparently, a falling off of the sales, with the result that the local drug store having the Tanlac agency telegraphed to Atlanta for help. The help came in the person of P. C. McDuffie, counsel for the Tanlac concern and president of the Atlanta Ad Men's Club. McDuffie demanded retraction and exoneration from the Shreveport Ad Club when he appeared before that body with his principal, G. F. Willis. What follows is thus described by Mr. Adams:

"Up rose Mr. Hudson, of the Vigilance Committee, and asked:

"'Have you the testimonial of Mrs. T. W. Pipes?'

"'We have,' said McDuffie.

"'Will you be good enough to read it?'

"'Mr. McDuffie obliged. Then another questioner popped up (indeed, from this time the queries were fired at McDuffie and Willis from all parts of the room):

"'Who wrote that testimonial?'

"'It was handled in the Atlanta office of the Massingale Advertising Agency.' (St. Elmo Massingale, head of the Massingale Agency, is a former president of the Atlanta Ad Men's Club, which, by the way, appears to be considerably tinged with Tanlac.)

"'Was the questionnaire form filled out there?'

"Here Willis rose. 'I personally edit and supervise the copy of every testimonial we put out,' was his significant statement.

"'Did Mrs. Pipes write that she was "well and happy," as the testimonial states?'

"Neither McDuffie nor Willis would state that she wrote it. Indeed, they could not well do so, in view of the fact that the answers to the form questions were not in her writing.

"'Was it written in Atlanta?'

"'It was edited in Atlanta.'

"'Where do you get that "well and happy" stuff?'

"McDuffie read what purported to be a statement of Mrs. Pipes' case. It did not assert that she was well and happy. 'But if it doesn't mean that, what does it mean?' he challenged.

"'That lady,' said a local physician 'is now at the Charity Hospital, where she was operated on by Dr. Sidney Williams for cancer of long standing. Did you know that?'

"But Mr. McDuffie didn't want to talk about that. He dodged.

"'Is it true,' asked some one else, 'that Mrs. Pipes' daughter told your agent that the testimonial was false and demanded that it be withdrawn?'

"'She said something to Mr. Reid about it. He said that all he could do was to communicate with us.'

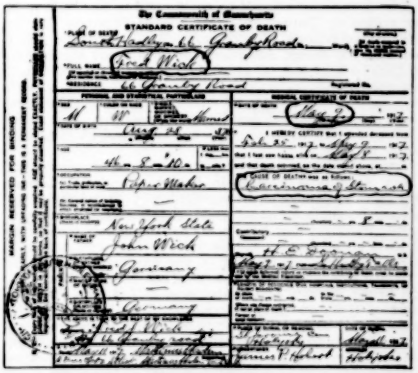
"'Did he do that?'

"'Yes,' spoke up Willis, 'I got his letter.'

"'What have you done about it?'

"'Nothing up to the present. I saw no reason to withdraw the testimonial.'

"Subsequently it was withdrawn. The testimonial in the Cincinnati papers from a dead man was then brought up for discussion. Mr. McDuffie explained that this was a regrettable mistake. After some arguments a motion was carried, against the heated protest of McDuffie, to refer the whole



STANDARD CERTIFICATE OF DEATH

Fred Wick

46 Granby Road

Reduced facsimile of the death certificate of Fred Wick. Note that he died of cancer of the stomach May 9, although the Tanlac concern told the public on May 11 that he had been "relieved of stomach trouble."

matter back to the Vigilance Committee. When a motion to adjourn followed the lawyer-president of the Atlanta Ad Men's Club hammered the table and shouted: 'You shall not adjourn until you have exonerated us!' 'Exoneration' would have been worth a hundred thousand dollars to Tanlac as advertising material.

"They didn't get it. But that wasn't for lack of a final appeal, based on newspaper support."

Mr. Adams tells how McDuffie then presented letters and telegrams from various newspaper publishers, the papers in question being the ones listed at the beginning of this article. He then continues:

"Some other interesting Tanlac matter has since come to light. 'Prominent' physicians who have given testimonials have been shown to be drug-store-counter practitioners. Heyder Barr, left fielder of the Shreveport nine, testified to his desperate condition; how he ran down until he was too weak to play ball, before Tanlac put him on his feet again. If he was too weak to play ball he concealed it admirably, for neither the club physician nor the club pay-roll ever found it out. John T. Elliott is another Shreveport man who was supplied with some desperate symptoms by the Tanlac testimonial experts. Although his ailments had been terrifying him for twenty years (according to the advertisement) he forgot all about them when he was examined for life insurance, and the examining physician found no trace of them. Then there is—or was—Mrs. Jacquet, who gave public thanks for Tanlac in print, and died last week."

In connection with what has been written above, a further interesting side-light on the Tanlac quackery was brought to the attention of THE JOURNAL during the past few days. Dr. F. L. Leland of South Hadley Falls, Mass., sent to THE JOURNAL office a copy of the Holyoke *Daily Transcript* of May 11. This single issue of the paper contained two items. One of these was an advertisement stating that Mr. Fred Wick of Granby Road, South Hadley Falls, Mass., "has been relieved of stomach trouble and has gained ten pounds in weight since taking Tanlac." The other item, under the ominous black-faced heading "Funerals," advised the readers that "the funeral of Fred Wick was held this morning from his home, Granby Road, South Hadley Falls. . . ." Through the further courtesy of Dr. Leland we have received a certified copy of the death certificate of Fred Wick which shows that the poor fellow instead of having "been relieved of stomach trouble" by the use of Tanlac had in fact died of carcinoma of the stomach, TWO DAYS BEFORE THE TESTIMONIAL WAS PUBLISHED.

We do not expect that the recounting of these damning facts will result in the withdrawal of Tanlac from the market. It is hopeless to expect that the men who are exploiting it and the newspapers that are sharing the profits of its sale will be in the least affected by any facts that may be brought out regarding Tanlac. All that can be hoped is that by repeated publication of such instances as these the public and also the decent advertisers of honest and meritorious products will at last be aroused to the point where it will cost the newspapers more to accept advertisements of such humbugs as Tanlac than to reject them. When that time comes, and commercial expediency accomplishes what moral responsibility failed to accomplish, Tanlac and its congeners will be no more.

How Syphilis is Treated in France.—Carle and Carrère have taken advantage of the unprecedented opportunity in the military hospitals for seeking out syphilitics and investigating the treatment they have had. As the soldiers come from all parts of the country and the colonies they were thus able to get an extensive oversight on the way in which syphilis is treated throughout the country. They tabulate their findings in the *Annales de Dermatologie*, 1917, **6**, 277, grouping the cases by the adequacy of treatment. They were impressed by the almost universal change from internal to subcutaneous or intravenous treatment, even in the remotest hamlets. But in over 14 per cent. the syphilis was not recognized until in a late stage, and in over 22 per cent. it had never been suspected. Only 4.74 per cent. were entirely free from manifestations of the disease of those having a record of thorough treatment. This group, however, included 6.16 per cent. still with syphilitic lesions, notwithstanding the thorough treatment. Only 11.85 per cent. of the total had been given internal treatment alone. Only 40 per cent. had been given injection treatment, but it had been far from adequate, and most of them presented serious syphilitic lesions. It is evident from these findings that physicians generally in France do not give adequate doses and do not keep them up long enough to actually exterminate the syphilis.

Correspondence

THE PATIENT'S SIDE

To the Editor:—The following letter is an interesting human document. Perhaps we hospital physicians who are habituated to all kinds of distress and suffering do not always pay sufficient attention to the sensitive temperaments of certain patients, and the effect it has on them to hear themselves and their ailments discussed.

The writer of the letter is a patient who recovered, some ten or twelve years ago, from what was apparently malignant endocarditis, and on whose face the therapeutic history is written in the form of silver staining. He was left with a chronic lesion which compelled him to give up his career and remain at home, a semi-invalid, helping his sister in her millinery business. Recently what seemed to be the threatenings of a relapse induced me to send him to the hospital again. He stayed, however, only a few days, and writes this letter in apology for his insistence on returning home against my advice. SOLOMON SOLIS COHEN, M.D., Philadelphia.

My Dear Doctor Solis Cohen:—And so I am home again. I feel that I owe you a statement why I could not stay in this most beautiful of institutions and everybody treating me so kindly.

For the last few years since my health improved I was mostly among healthy people; everybody looked at me as at his equal and I have tried to forget my troubles and condition. The kind advices and encouragement I received from you and the love of those who surrounded me really made me feel stronger all the time and I even began to hope for a more active life. But coming to the hospital I became transformed from a person into a case, into a very peculiar case worth while examining, and every physician—and there are a great many coming, younger and older men—came over to see the phenomenon (I know that it is their duty and have really nothing against them) and to every one I had to repeat my ill-fated history, tell the story of my broken life. I have a romantic temperament (whether to my credit or discredit), so all this injured me deep in my heart. The discussions about my condition opened old wounds anew, and I felt like a criminal in the court of justice awaiting his sentence of life and death. Thus I have decided that so long as my condition permits me, I shall stay home and try to enjoy life while it lasts.

AMERICA'S FINANCIAL CONTRIBUTION TO GERMANY ON ACCOUNT OF OUR PATENT LAWS

To the Editor:—I have read several articles in which the medical fraternity has been proud of the fact that no death-dealing instrument used in the present war has been invented by their profession, but that their part as usual is to alleviate suffering humanity. I also have read that our patent laws are such that every physician and druggist who purchased aspirin before the war had to pay 43 cents an ounce in the United States, whereas the same was sold in Austria-Hungary at 4 cents an ounce and in the British Isles at 6 cents an ounce, we paying 37 cents an ounce more than any other country. Now, if we have been paying this much more in proportion on all drugs on which Germany has a patent, will some one who has access to the records showing the importations of this class of goods please see how much the physicians and druggists have been taxed indirectly by Germany to accumulate the enormous amount of money she has used in the war? It seems that we have paid our part of the taxes to Germany. I am opposed to being taxed indirectly by Germany in order to help her try to exterminate the rest of humanity. While we are urging the abolition of the patent on salvarsan, let us also insist on only a reasonable profit for Germany on all patents she has on medicines.

H. SCHMIDT, M.D., Addieville, Ill.

PUT "NOSTRUMS AND QUACKERY" IN THE LIBRARY

To the Editor:—The Propaganda Department of the American Medical Association merits from the medical profession the heartiest support. My copy of "Nostrums and Quackery," as a circulating library of one volume, is constantly busy. If I be entitled to a suggestion it would be this: A copy of the above named publication should be placed, by physicians, in every public library in America.

EDGAR C. DENNY, M.D., Milton, Ind.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, Montgomery.

ALASKA: Juneau, July 3. Sec., Dr. H. C. DeVighne, Juneau.

ARIZONA: Phoenix, July 2-3. Sec., Dr. John W. Thomas, 306 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, July 10. Sec., Dr. Charles B. Pinkham, 529 Forum Bldg., Sacramento.

COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Regular: New Haven, July 10-11. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven.

CONNECTICUT: Eclectic: New Haven, July 10. Chairman, Dr. John W. Fyfe, Saugatuck.

CONNECTICUT: Homeopathic: New Haven, July 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Dover and Wilmington, June 19-21. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 10. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA, Regular: Palatka, June 19-20. Sec., Dr. E. W. Warren, Palatka.

ILLINOIS: Chicago, June 14-16. Sec., Dr. C. St. Clair Drake, Springfield.

INDIANA: Indianapolis, July 10-12. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

IOWA: Iowa City, June 7-9. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 19-21. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, June 19-21. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 7-9. Sec., Dr. J. A. Henderson, 921 Canal St., New Orleans.

MAINE: Augusta, July 5-6. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 19. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MASSACHUSETTS: Boston, July 10-12. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 5-8. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 19-20. Sec., Dr. W. S. Leathers, Oxford.

MISSOURI: St. Louis, June 18. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEW HAMPSHIRE: Concord, June 25-26. Sec., Dr. W. T. Crosby, Beacon Bldg., Manchester.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, 438 East State St., Trenton.

NORTH CAROLINA: Raleigh, June 19. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 3. Sec., Dr. George M. Williamson, Grand Forks.

OHIO: Columbus, June 11-14. Sec., Dr. George H. Matson, State House, Columbus.

OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. R. V. Smith, Tulsa.

OREGON: Portland, June 5. Sec., Dr. Herbert S. Nichols, Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-12. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 5. Sec., Dr. Gardner T. Swarts, 315 State House, Providence.

SOUTH CAROLINA: Columbia, June 12. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 10. Sec., Dr. Park B. Jenkins, Wauhay.

TENNESSEE: Knoxville, Memphis and Nashville, June 15-16. Sec., Dr. A. B. De Loach, Scimitar Bldg., Memphis.

TEXAS: Austin, June 19-21. Sec., Dr. M. F. Bettencourt, Mart.

VERMONT: Burlington, July 10-12. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

WASHINGTON: Seattle, July 3-5. Sec., Dr. C. N. Suttner, Walla Walla.

WEST VIRGINIA: Charleston, July 10. Sec., Dr. S. L. Jepson, Capitol Bldg., Charleston.

WISCONSIN: Milwaukee, June 26. Sec., Dr. J. M. Dodd, 220 E. 2nd St., Ashland.

Recognizes National Board

An amendment to the Delaware medical practice act, which was approved April 16, 1917, provides that applicants examined and approved by the National Board of Medical Examiners will be licensed in Delaware without further examination on the payment of the usual reciprocity fee of $50. This is the eleventh state to provide, either by board ruling or by an amendment to the practice act, for the recognition of the certificate of the National Board of Medical Examiners. The other states are: Colorado, Idaho, Iowa, Kentucky, Maryland, New Hampshire, North Carolina, North Dakota, Pennsylvania and Rhode Island.

Texas June Reports

Dr. J. S. McCelvey, secretary of the Texas State Board of Medical Examiners, reports the practical and written examination held at San Antonio, June 27-29, 1916. The total number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 92, of whom 80 passed, including 3 osteopaths, and 12 failed, including 2 osteopaths. Forty-eight candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University	(1916)	90.2
Rush Medical College	(1895) 88.2; (1914)	81.5
University of Louisville	(1892)	81.5
Tulane University of Louisiana	(1907) 75; (1916) 79.2, 83.2, 85.5, 85.5, 87.5, 91.2	
St. Louis University	(1916)	83.2
Meharry Medical College	(1916) 75, 79.2, 81.6, 82.5, 83.6, 86.5	
University of Tennessee	(1914) 84.5; (1915) 81.5; (1916)	84.5
Vanderbilt University	(1916) 84, 89.5, 90.5, 91.5, 92.5	
Baylor University	(1916) 75, 75, 79.5, 79.5, 80.5, 81.5, 81.5, 83.5, 83.5, 84.5, 85.2, 85.5, 85.5, 86, 86.5, 86.5, 87.7, 88.5, 89.7	
Fort Worth School of Medicine	(1916) 76.5, 77, 82.5, 84.5	
University of Texas	(1915) 85.5; (1916) 75, 79.5, 79.5, 80.5, 83.5, 83.5, 83.5, 83.5, 84.2, 84.2, 84.5, 84.7, 85, 85.2, 85.2, 85.5, 86, 86, 86.7, 87, 87.5, 87.5, 88.5, 88.5, 92.5	
FAILED		
St. Louis College of Physicians and Surgeons	(1914)	63.5
Meharry Medical College	(1915) 62.7; (1916)	71.7
Baylor University	(1916) 67.5, 67.5, 69.5, 71, 72.5	
Fort Worth School of Medicine	(1916)	70.5
National School of Medicine, Mexico	(1906)	70

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Little Rock		(1910)	Arkansas
University of Arkansas		(1902) (1912)	Arkansas
University of Colorado		(1913)	Colorado
Georgetown University		(1912)	Dist. Columbia
George Washington University		(1911)	Vermont
Atlanta College of Physicians and Surgeons		(1903) (1913)	Georgia
Atlanta Medical College		(1915)	Georgia
University of Illinois		(1915)	Oklahoma
Central College of Physicians and Surgeons		(1897)	Indiana
Louisville and Hospital Medical College		(1908)	Mississippi
University of Louisville		(1893) Kentucky; (1911)	Mississippi
Bowdoin Medical School		(1897)	Vermont
Baltimore Medical College		(1904)	Arkansas
Michigan College of Medicine and Surgery		(1896)	Oklahoma
University of Michigan Homeo. Medical School		(1888)	Michigan
American Medical College		(1902)	*Kansas
Barnes Medical College		(1901)	Missouri
Eclectic Medical University*		(1915)	Arkansas
National University of Arts and Sciences		(1915)	Missouri
St. Louis College of Physicians and Surgeons		(1915)	Missouri
University Med. Coll., Kansas City		(1901) Kansas; (1911) (1912) Oklahoma	Missouri;
Washington University		(1901)	Missouri
John A. Creighton Medical College		(1915)	Nebraska
Bellevue Hospital Medical College		(1893)	Louisiana
University of Oklahoma		(1913) (1914)	Oklahoma
Medico-Chirurgical College of Philadelphia		(1899)	Penna.
Meharry Medical College		(1913)	Tennessee
Memphis Hosp. Med. Coll.		(1902) Oklahoma; (1910, 2)	Tennessee
University of Nashville		(1903)	Tennessee
Vanderbilt University		(1913) (1914) (1915)	Tennessee
Baylor University		(1913)	Tennessee
University of Texas		(1913)	Missouri
Medical College of Virginia		(1914)	W. Virginia
Faculty of Med., Surg. and Pharmacy, Bahia		(1887)	Brazil
National School of Medicine, Mexico		(1879) (1896)	Mexico
School of Medicine of Nuevo Leon		(1898)	Mexico

*College reported not recognized by the Missouri State Board of Health.

Arizona April Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners, reports the written examination held at Phoenix, April 3-4, 1917. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number examined was 14, of whom 11 passed, including 3 osteopaths, and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
California Eclectic Medical College	(1912)	75
University of California	(1916)	80.1
Rush Medical College	(1889)	74.3*
University of Illinois	(1913) 81.4; (1914)	76.8
Syracuse University	(1896)	70.6*
Willamette University	(1906)	75.5
Jefferson Med. College of Philadelphia	(1911)	82.1
FAILED		
College of Physicians and Surgeons, Baltimore	(1885)	36.2
Northwestern Medical College, St. Joseph	(1894)	56.2
National School of Medicine, Mexico	(1910)	57.4

*Credit allowed for years of practice.

Book Notices

HOW TO RUN AN AUTOMOBILE. A Concise, Practical Treatise Written in Simple Language Explaining the Functions of Modern Gasoline Automobile Parts with Complete Instructions for Driving and Care. Includes the Most Thorough and Easily Understood Illustrated Instructions on 1917 Automobile Control Systems Ever Published. By Victor W. Page, M. E. Cloth. Price, $1. Pp. 178, with 72 illustrations. New York: Norman W. Henley Publishing Company, 1917.

This is a concise, simply worded course of instruction bearing on the functions of the modern gasoline automobile. It does not tell one how to build an automobile, but it does aim to make for better driving and care of an automobile by describing and explaining the functions of the various parts of a machine. General starting and driving instructions include lubrication, starting the motor, handling spark and throttle levers, brake application and many other things it would be well for the driver to know. How many drivers know why the spark lever is advanced and how it should be manipulated to get a maximum speed with a minimum fuel consumption? Rules of the road and motoring courtesies are given in a special section. It is short, but full of useful suggestions. The 1917 control systems as installed in twenty-six cars are described fully. Many useful hints are contained in the chapter on the care of automobiles. This book fills a real need because it is written for the owner who drives his own car and yet knows nothing as to its construction or handling.

LES BLESSURES DES VAISSEAUX. Par L. Sencert, Professeur agrégé à la Faculté de Médecine de Nancy. Paper. Price, 4 francs. Pp. 226, with 70 illustrations. Paris: Masson & Cie, 1917.

The author's consideration of vessel injuries is from much the same point of view as that which prevailed before the onset of the war. The book, nevertheless, is valuable because of its exposition of vessel injuries in their anatomic, physiologic and operative aspects, with practical illustrations in numerous cases of injuries of the main vessels of the body. The different types of injuries resulting from the various missiles are enumerated, together with their subsequent evolution resulting in thrombosis, hemorrhage, gangrene, aneurysms, etc. The symptoms and diagnosis of internal hemorrhage into the body cavities, with the production of diffuse hematomas in the tissue spaces, are described. In the chapter on treatment, blood transfusion is discussed, but little consideration is given to the recent advances which have been made in this country along that line. In the second part of the volume, which deals with injuries of vessels of the various regions of the body, operative treatment figures prominently. The book is to be especially recommended to those going into army service.

A MANUAL OF NERVOUS DISEASES. By Irving J. Spear, M.D., Professor of Neurology at the University of Maryland. Cloth. Price, $2.75 net. Pp. 660, with 169 illustrations. Philadelphia: W. B. Saunders Company, 1916.

A person who is content to limit himself to one small book on diseases of the nervous system will find this work as good as any. If the student or practitioner wishes a fair smattering of everything and a really good article on nothing, he has it here. There is everything from the anatomy and physiology of the nervous system, through tabes, brain tumor and epilepsy to angioneurotic edema and achondroplasia. For a work which aims to be condensed and practical, some of the apportionment of space is odd. There is a page for the corpus callosum, nearly one for the fornix, and the same for the septum lucidum and velum interpositum, structures which have practically nothing to do with clinical neurology, while there is only one page for functions of the cerebral cortex. There are six and a half pages on Raynaud's disease, which a general practitioner may see about once in five or ten years, and seven and a half on migraine, which he is called on to treat many times every year. The usefulness of the book is greatly impaired by a looseness of style, a lack in definiteness of statement. "Diseased conditions" are mentioned without in the least indicating what these conditions may be. "Patients who are pale and debilitated should receive arsenic" (page 542), apparently regardless of whether they are so because of chlorosis, streptococcus infection, nephritis, loss of sleep, or lack of food. There are too many careless statements. The author writes of "increase of albumin in the cells," when presumably he means "and of the cells." He says that herpes is a common complication of sciatica and of brachial neuralgia, which is teaching a pathology which probably he himself would promptly repudiate. In the article on multiple neuritis, he puts typhoid, influenza, beriberi and leprosy among the infections, and rheumatism, tuberculosis and syphilis in "general diseased states" along with senility, malignant growths and arteriosclerosis. In the treatment of neuralgia, he advises the injection of alcohol without noting any distinction between purely sensory and mixed nerves. A reader depending on this book might inject 80 per cent. alcohol into the sciatic nerve and for the next year or so regret the paralysis he had caused. The book gives an excellent outline of the nervous system and its diseases. For nurses who are not required to take their neurology very seriously, it might be an excellent textbook; but for the medical student or practitioner it is neither a sufficiently competent nor an entirely safe guide.

PUBLIC HEALTH NURSING. By Mary Sewall Gardner, R.N., Superintendent of the Providence District Nursing Association. With an Introduction by M. Adelaide Nutting. Cloth. Price, $1.75. Pp. 372. New York: The Macmillan Company, 1916.

Miss Gardner's book is in part the revision of articles which have appeared in the *Public Health Nurse Quarterly*. The first portion of the book is devoted to a discussion of the history of public health nursing, the second to the organization and machinery of visiting nursing, including chapters on how to organize a visiting nurse association, the board of managers, the superintendent, the pupil nurse, and methods of organization and administration, while the third part is given up to special topics on public health nursing. This includes nursing of tuberculous patients, welfare nursing, school nursing, mental hygiene nursing, and industrial nursing. An appendix contains an outline of the national organization for public health nursing. The book contains a large amount of information, and should be of great assistance in the organization of public health nursing in any locality.

AN ADEQUATE DIET. By Percy G. Stiles, Ph.D., Assistant Professor of Physiology in Harvard University. (Harvard Health Talks.) Cloth. Price, 50 cents. Pp. 48. Cambridge: Harvard University Press, 1916.

ADENOIDS AND TONSILS. By Algernon Coolidge, M.D., Professor of Laryngology in Harvard University. (Harvard Health Talks.) Cloth. Price, 50 cents. Pp. 46. Cambridge: Harvard University Press, 1916.

These little books present the substance of some of the public lectures delivered at the Medical School of Harvard University, the intention being to provide in easily accessible form modern and authoritative information on medical subjects. Stiles' book on "An Adequate Diet" tells in simple language the essential facts of nutrition in accordance with our best present day knowledge. A short bibliography is included. Coolidge's book on "Adenoids and Tonsils" explains in ordinary language and by the use of diagrams the nature of these structures and the diseases to which they are subject. Both of these books can safely be put into the hands of patients.

THE GROWTH OF MEDICINE FROM THE EARLIEST TIMES TO ABOUT 1800. By Albert H. Buck, B.A., M.D. Cloth. Price, $5. Pp. 582, with 28 illustrations. New Haven: Yale University Press, 1917.

Probably no subject connected with medicine is so neglected as the history of the growth and development of professional knowledge and methods. The few books on this subject are either erudite and heavy to a degree that is repellent to the average reader, or so superficial as to be of little value. Dr. Buck has endeavored with marked success to write a history of medicine that should be both accurate and entertaining. That it is based largely on Neuburger's more voluminous work can hardly be regarded as a disadvantage since most American readers would probably never come in contact with the three volumes of the Viennese historian. Dr. Buck's first volume brings the history of medicine up to the beginning of modern times. It is divided into three main parts, ancient medicine, medieval medicine and the medicine

of the Renaissance, covering eight of the nine epochs into which Neuburger has divided the history of medicine, or all of them except modern medicine from the beginning of the seventeenth century to the present time. Especially interesting are the chapters on Oriental medicine, the Arab renaissance, and the advance of surgery during medieval times. The illustrations, especially the portraits, add greatly to the attractiveness of the book, while the interesting style of the author quickly commends itself to the reader.

MENTAL CONFLICTS AND MISCONDUCT. By William Healy, Director of Psychopathic Institute, Juvenile Court, Chicago. Cloth. Price, $2.50 net. Pp. 330. Boston: Little, Brown & Co., 1917.

This is the fourth of a series of books by Dr. Healy, formerly director of the Psychopathic Institute of the Juvenile Court of Chicago. The others dealt with the individual delinquent, pathologic lying, accusation and swindling, and with honesty and dishonesty among children. The present volume considers the influence on conduct in children of mental conditions and especially of mental conflicts and observations. Whether or not one agrees with the conclusions of the author, the histories which he cites cannot fail to throw light on many cases of delinquency and misconduct in children which have heretofore been inexplicable. The close connection between misconduct, especially along social lines, and the mental shocks caused by unexpected experience or knowledge for which the recipient was unprepared is clearly shown. No one can read the records of personal experience without acquiring an entirely different attitude toward the apparently inexplicable actions of children and young persons still in the impressionable stage.

UNIVERSAL MILITARY EDUCATION AND SERVICE. The Swiss System for the United States. By Lucien Howe. Cloth. Price, $1. Pp. 138. New York: G. P. Putnam's Sons, 1916.

Dr. Howe's answer to the question, why a student of medicine should undertake to discuss universal military education, is that, a third of a century ago, in examining the eyes of more than a thousand public school pupils and finding many cases of near-sightedness, he found "setting-up" exercises of great value in improving the physical condition of these children. He is also a strong believer in the utility of systematic military training in developing broadness, exactness, restraint, efficiency and other personal qualities. He discusses the necessity of preparedness as a foundation for peace, and compares the volunteer system with the Swiss and Australian systems, advocating universal military education on account of its value to the growing boy as well as for a foundation to a universal military service system. Dr. Howe argues his case well, and his subject is certainly a timely one.

THE KINGDOM OF THE MIND. How to Promote Intelligent Living and Avert Mental Disaster. By James Mortimer Keniston, M.D. Cloth. Price, $1.25. Pp. 245. New York: G. P. Putnam's Sons, 1916.

From the experience drawn from years spent in caring for those of unsound minds, Dr. Keniston endeavors to tell his readers how to promote intelligent living and how to avert mental disaster. In his opinion, the vagaries of the disordered mind enable us the better to understand the normal processes of the healthy mind. The book is an enlargement of a series of lectures delivered before various social organizations, and is intended for the young as well as for adults, being an effort to present in simple language an analysis of the mental faculties so that the reader may learn to use his faculties intelligently and to conquer doubts and fears. Physicians in search of a suitable book for patients in need of mental discipline would do well to consider Dr. Keniston's volume.

A HANDBOOK OF SURGICAL OPERATIONS DESIGNED FOR THE USE OF STUDENTS OF SURGERY. By K. K. Chatterji, F.R.C.S.I., Surgeon, Campbell Hospital, Calcutta, with a Foreward by Lt. Col. R. Bird, I.M.S., Cloth. Price, 7 shillings 6 pence net. Pp. 238, with 26 illustrations. London: Butterworth & Co., 1916.

The author has given a simple, brief description of the commoner surgical operations, which may be of value to the student in the cadaver room. There is nothing new in the work, and the illustrations, most of which are in colors, are not up to present day standards.

Social Medicine, Medical Economics and Miscellany

THE ECONOMIC PRINCIPLES INVOLVED IN FEE DIVISION

CHARLES S. ELDER, M.D.
Professor of Surgery (Gynecology), University of Colorado, School of Medicine
DENVER

Among those who divide fees are some who canvass vigorously and bid extravagantly for patients with the purpose of doing a large amount of work. Even in these men one must recognize a commendable yearning for wide experience and technical accomplishment. They are but following familiar paths which men of better purposes have beaten. Other surgeons of more amiable motives share their fees with those referring them patients. These surgeons assert that the physician's fee is small as compared with their own, which the physician has made it possible for them to secure. Their defense of the "combined bill' is that it tends to equalize the return to the two branches of medicine, the pursuit of which is assumed to demand equal talent.

The fellows of the American College of Surgeons are united by a solemn pledge which spurns in the most positive terms all manner and all appearance of fee division. In that pledge, however, one finds this asseveration:

> I pledge myself . . . to teach the patient his financial duty to the physician.

How comes it that the surgeon must assume this task? Is this not the physician's patient? Has not the physician, in all probability, attended him before, and when a bill was rendered for such service was it not promptly paid? How can such a patient be taught his financial duty? The physician is the patient's friend and adviser. Any instruction relating to financial duties would more properly come from the physician. This pledge should, therefore, be turned inside out and made to read:

> I pledge myself to seek the physician's assistance in teaching his patient one's financial duty to one's surgeon.

Such a rendition seems more humorous than sincere. But why so? The reason is, the fellows of the American College of Surgeons feel, what the most generous fee divider affirms, that there is an unjust disparity in the rewards of the physician's work as compared with those of the surgeon.

There is, then, one central fact implied in the statements and performances of all persons concerned in the question of fee division. On this fact the antagonisms of principle and action depend. The fact is that there is a difference in the genesis and in the amount of the physician's and the surgeon's fees. Let us turn our efforts, then, to an explication of them both.

A physician charges a definite sum for office calls, another for house calls, another for an initial examination, and so forth. Though these fees are not absolutely stable and uniform in all physicians' practices, they tend, nevertheless, toward stability and uniformity. It is important to note, in anticipation of what is to follow, that the cost of service does not vary with the utility of the service. Whether the patient survives because of medical care or perishes in spite of it, the charge for each item of attention is the same as for similar items in other cases. There is, moreover, little if any tendency to change the cost of treatment because of the financial resources of the patient. Large discounts may, indeed, be made in cases of pressing poverty, but it is noticeable that they are spoken of as "discounts," as something subtracted from the customary and correct charge.

It must be clear that if the physician's fee depended only on his will it would vary immeasurably in different cases. It would always be a maximum charge. It would bear some relation to the financial resources of the patient. Otherwise it could not be a maximum charge. As variability is not a characteristic of medical fees, and as there is no discernible relation between them and the wealth of patients, it follows

that the rewards of medical service are regulated by some power external to the physician himself. As to what that power is, one need not long be in doubt.

The call of the community as a whole for services of a particular kind and the relative amount of talent which can be directed to the performance of those services will, operating together, strike a balance which shall be the compensation that talent is to receive. This principle of supply and demand is the essential factor operating everywhere to determine wages. It frequently happens that the physician is urged to charge more for his services, by some one who, let us hope, knows more of physical than of social science. The prudent answer to this alluring importunity is apt to be, "Others will do the work for such a price, how dare I ask more?" This reply shows a conception of the most obvious factors in the regulation of wages in general, and implies, what never should have been doubted, that even the high duties of the physician come within the purview of economic law.

Let him think twice who is about to disregard this law of wages. If a physician asks more for his services than do his fellows, he must justify his charges by assuming an attitude of superior learning and abilities which are presumed to place him above the plane of competitive activity. Unsupported pretensions will not long endure. Unless one's endowments are genuinely and ostensibly appropriate to one's claims, it were better not to try the hazardous experiment.

Such an experiment is being tried by those audacious physicians who charge an extraordinary fee for the examination of a patient with a disease that is to be treated by surgical means. In doing so the physician not only violates the custom of the community relating to medical fees, but, probably, the precedents established by his own example. Having made other examinations as extensive or even more so for the customary fee, it will be difficult for the patient to understand why, when the unusual expense of a surgical operation falls on him, the cost of his examination should rise to an extraordinary sum.

The diagnosis of diseases of the nervous system and of those organs within the chest demand medical attainments of a high order. Consider how many senses are employed in the examination of the heart and lungs: the revelations of sight; the many appeals to the auditory sense as one listens to the heart sounds, the breath sounds, the voice sounds, and the many adventitious sounds; add to this the fine gradations of the percussion note and the beautiful way in which the facts revealed by one sense are verified by another. Yet these are but hints of the admirable refinement to which diagnosis in this region may be carried. Any one watching a skilful physician examine the chest or nervous system could hardly fail to be impressed with the dexterity with which the investigation is conducted and with the number and import of the facts which it reveals. The diseases so discovered are rarely treated by surgery. The fee for the examination must, therefore, rest on its own merits. It may rarely be augmented from a part of a surgeon's fee. It is, as might be expected, comparatively low and uniform.

The diseases of the abdomen present a strange contrast to those just mentioned. The diagnostic methods used in discovering them are the crudest of those in use in any part of the body. With a little sifting of significant events from the history of the disorder, and a little palpation for stiff and tender places, the deed is almost done. If the disease turns out to be a transient disorder of digestion, the attendant would not dignify his examination with a name. He sends his bill for the call or calls made. If, however, the point of his index finger happens on tenderness and rigidity midway between the anterior superior spine of the ilium and the umbilicus, that which before was but casual inquiry suddenly becomes an examination of high financial dignity.

How is this obtrusive inconsistency to be explained? Even though the bill for such an examination is paid without apparent reluctance, suspicion must still lurk in the patient's mind. The coveted relation of fidelity and trust between physician and patient has received a severe strain, if it has not snapped asunder. In the common attempt at justification of this unusual fee, a certain case is imagined from which the facts for mental experiment may readily be derived. This case is usually appendicitis of a character which, without surgical treatment, would prove fatal, but which, with an operation, results in complete recovery. The operation having proved a life-saving measure, the surgeon's service has been of the highest conceivable utility. The surgeon is justified, so it is contended, in charging for his work the highest price which the patient can be expected, within reason, to meet. The physician, too, has played no small or unessential part in accomplishing this great purpose. His recognition of impending danger and his timely alarm were necessary parts of the life-saving process. He is, then, according to the same principle, entitled to a share in the high award. He must receive his compensation from the surgeon, or, if that should be adjudged questionable practice, he must make an independent charge for his diagnosis and direction.

To this reasoning the just objection should be made that comparatively few surgical operations are life-saving measures. The illustration cannot, therefore, represent all cases in which large fees appear. But the crucial question is this: "Does the value[1] of a commodity or of a service depend on its utility?" The answer is short, unanimous and decisive. "Never." Air and water are necessary to life. They are of the greatest possible utility. Neither has value. Yet it is possible that in the midst of a desert a drink of water might command the highest price compatible with the wealth of the purchaser. To have value, a thing must be so limited in quantity that there is not enough available to satisfy the demand for it. It is difficulty of attainment which gives value to useful things.

It is a familiar fact that the services of physicians may be secured at moderate prices. Not only do others offer their counsel at such prices, but in all probability the physician in question has set his own price and example. Look at it as one may, this plan of deriving unwonted profit from surgical cases cannot be shown to be justifiable or expedient. It cannot be continued without entailing ultimate loss to the physician and distrust of his profession. In spite of the most vigorous and eloquent exhortation to adopt a higher rate of fees, the services of the physician will be determined by those relentless agents which fix the reward of every kind of effort that is subject to competition.

This consideration of the nature of the physician's fee and of the factors acting toward its determination will make easier the study of the financial returns for surgical activity. It has cleared the ground of several confusing circumstances. It will show by strange contrast that what is of dominant influence in the one is but faintly perceptible in the other. That the fee of the surgeon is due to the utility of his work, to his great therapeutic power, may be dismissed at once in view of the very brief glance which has been permitted of the nature of value.

The cost of surgical operations maintains a close relation to the wealth, income or earning power of the patient. One of the largest surgical clinics in this country has a well-organized bureau for ascertaining the financial standing of those who apply at that clinic for treatment, the motive being the adjustment of the fee for operation to the means of the patient. It will hardly be questioned that this practice is general and not limited to persons and places. The fee must, therefore, vary greatly, being low in some cases and of opulent proportions in others. That which depends on the wealth of the patients cannot also depend on the subtractive influence of competition. Both the nature of the surgeon's fee—its irregularity—and the chief fact which enters into its determination—the wealth of the patient—show that competition does not sensibly affect it.

Any industry which is not affected by competition is, necessarily, a monopoly. The word "monopoly" signifies unified control over a certain commodity or a service. That the surgeon's fee is monopolistic in character is verified by the

1. Value is here used in its economic sense of the desirability or worth of a thing as compared with the desirability or worth of other things. If a thing cannot be sold or bartered for other things, it has no value but still may be highly useful.

following incidents: The physician sometimes asserts that he is entitled to a share of the surgeon's fee because he might have sent his patient to whom he wished. The selection of a particular surgeon is a special mark of favor. And gratitude, if nothing else, should prompt generostiy. To this the surgeon replies that however benevolent the motives on both sides, such a transaction amounts to the selling and buying of patients. Now, that is not bought which cannot be delivered; therefore in both statements there is implied the absolute control of the physician over the patient. If the physician endowed with such authority acts with the surgeon, both as one man, in keeping the patient under the care of either, a monopoly is undeniably established.

If further proof were needed, it will be supplied by noting that monopoly signifies such control over certain articles or services as will make it possible to raise their prices higher than the level of prices fixed by free competition. Monopolies, naturally, aim to secure the greatest net profit. The price which will yield this profit is monopoly price. It is a maximum price. There can be no other purpose in ascertaining the financial resources of the patient than the fixing of a maximum price for his care. This does not mean that all the patient has is to be taken from him. That would not be a maximum price. It means that as much will be taken as will prove at once profitable and in no way detrimental to the business. The determination of such a price is always a delicate mathematical exercise. The patient must be dismissed satisfied, as it is desired that he should come again if in need of a similar service, and that he should commend his attendant to others. Were the price too high, the patient might decide to bear his ills rather than fly to others, poverty being among them. He might, too, look abroad for other and more economical sources of help, in which event competition would arise.

It has already been stated that an essential characteristic of value is difficulty of attainment. In the majority of instances the difficulty of attaining a thing is conditioned, largely, on the amount of labor required in its production. The output of a monopoly bears the value which labor imposes on it, together with that increment made possible by the exclusion of competition. If, now, one accepts the proposition so invariably advanced by those who inveigh against all manner of fee division, namely, that wealth should go to its producers, or that what one earns one should get, no more and no less, the surgeon's fee should be distributed in this wise: All that amount of money which arises from labor, allowance being made for those abilities, native and acquired, which were exercised in the case, should go to the surgeon. All that money arising from monopoly should be divided among those forming the monopoly in proportion to their services therein. If this division is not made, it will be the surgeon who has received and kept an unearned increment, a practice which he has justly denounced as being immoral and beneath professional dignity.

When the physician sees clearly, what he has hitherto but dimly discerned, that he is an agent in the creation of the surgeon's fee, he will either insist on its division, or he will refuse, henceforth, to cooperate to the surgeon's sole advantage. Human nature does not justify the hope that he will be content to sigh with Virgil, "It is not for yourselves, O, bees, that you make honey."

Were the argument to end here, this paper would be taken as an attempt at justification of fee division. But is it really so? Have we not been asking and answering the wrong question? The inquiry we have addressed to our conscience is, "Should the surgeon's fee be divided with the physician referring the patient?" The question we are now called on to answer is this: "Is it justifiable for the physician and surgeon to enter into collusion with the motive of excluding competition from other capable men when such united action entails increased expense to the patient?"

It will probably be hard to find any one who would answer this question in the affirmative, whatever might be inferred from one's professional conduct. When the conscientious physician has seen his relation to the surgeon, as this paper has attempted to reveal it, and a patient presents himself with a disease properly treated by surgical measures, the physician will write down the name of every man in the community capable of doing such work and deserving of such trust. With this guidance the patient will be able to consult with any one or with as many as he may wish. When such a plan has been adopted, what will happen to the surgeon's fee? Will the surgeon still inquire how much the patient has, or will he wonder what was the figure of the lowest bidder? Will any one need to explain to that patient where his money went?

The patient has two concerns respecting his operation: first, what service he is to receive, and next, what price he is to pay. Every possible effort has been made throughout the history of medicine to make it of greater and greater service. There has been no inattention to the first of the patient's wants. Toward the second we have been both imprudent and unjust. At one extreme we have been too charitable, at the other too covetous. The purpose of this essay is to make the way clear along which both of the desires of the patient may be satisfied—a high service and a low fee.

CONCLUSIONS

When the relation between the physician and surgeon, as at present maintained, is clearly understood, some form of fee division will be an obligatory consequence.

The pledge of the American College of Surgeons encourages this relation, while attempting to suppress its results.

Fee division will cease when patients are referred in an impersonal way to any one capable of doing the required work and when the surgeon's fee has been reduced and, in a measure, standardized by competition.

550 Metropolitan Building.

Work of the Municipality in Industrial Hygiene

The *Monthly Bulletin* of the New York Department of Health devotes a recent issue to a discussion of this subject. The first annual report of the division of industrial hygiene is published and the various activities of this division described. Placards giving precautions have been prepared for the fur and hatter's fur trades. There have been distributed among union painters 10,000 copies of a questionnaire outlining the principal signs of lead, turpentine, wood alcohol, benzin and benzene (benzol, C_6H_6) poisoning, and urging the necessity of consulting a physician or the occupational clinic staff if there appears reason to believe that any form of occupational disease exists. Health suggestions for bakers are now ready for printing, and appropriate advice on health matters is being prepared for other trades. Over twenty-eight lectures on industrial hygiene have been delivered before various medical societies, civic organizations, labor unions, public schools, etc. Addresses have also been made before various manufacturers' associations. The occupational clinic during its first year of active work has examined 8,912 bakers, 8,236 pedlers, 23,440 waiters, cooks and other food handlers, 886 furriers, 225 painters, 110 trade school girls and 203 employed in other industries, making a total of 42,042. Since the examination of all food handlers was an undertaking requiring a much larger force of physicians than were available, private physicians were given permission to conduct such examinations. During a period of nine months 1,196 physicians examined 33,700 persons. Among these, 8 cases of tuberculosis with positive sputum were found, and 17 doubtful cases and cases of clinical tuberculosis without positive sputum; only one case of active syphilis was found; there were 68 cases of latent syphilis and 6 doubtful cases in which the Wassermann test was refused or the person failed to return for probation inspection. There were 8 cases of acute gonorrhea, the persons being excluded from work. Four typhoid carrier suspects were found. The twenty clinic physicians examining 23,440 persons found 30 cases of tuberculosis with positive sputum, and 79 doubtful cases in which the Wassermann was refused and the person failed to return; 22 cases of active gonorrhea, and 4 typical typhoid carrier suspects. Two branches of the occupational clinic have been established in the Bronx and Brooklyn, respectively.

Medicolegal

Disclosure of Confidential Information

(Smith vs. Driscoll et al. (Wash.), 162 Pac. R. 572)

The Supreme Court of Washington affirms a judgment which dismissed, on a demurrer to the complaint, this action against the defendants, licensed and practicing physicians and surgeons, who were sued for damages for an alleged wrongful publication and disclosure of confidential information acquired by them in their professional capacity. The complaint stated that they and each of them had as witnesses in a certain case in a justice court slandered the plaintiff by testifying, over the timely and strenuous objection of the plaintiff, as to facts, information and communications having come to their knowledge in their capacity as physicians and surgeons, and gained in attending the plaintiff, such information being necessary to enable them to prescribe for him. The court says that it will not go into the question of whether the action was improperly designated as one for slander, for, if the facts set forth in the complaint entitled the plaintiff to relief, it was wholly immaterial by what name the action was called. Neither is it necessary to pursue at length the inquiry of whether a cause of action lies in favor of a patient against a physician for wrongfully divulging confidential communications. For the purposes of what the court has to say it will be assumed that, for so palpable a wrong, the law provides a remedy. The question presented was not the naked one of whether a physician is liable in damages at the suit of a patient for wrongfully divulging confidential communications, but: Is a physician, who, while testifying as a witness in the course of a judicial proceeding, discloses confidential communications made to him, or professional information acquired by him, while prescribing for a patient, liable in damages to the patient for so testifying? This question cannot be answered categorically. He may or may not be liable, depending on the facts of the particular case. While the court has been unable to find any cases directly in point, the applicable principles of law are not difficult to discover. To the ordinary mind it would seem that a physician, while testifying in a court of justice, is in the same situation as any other witness, and his rights and liabilities are to be determined by the same legal standards that are applied to a witness who is not a physician. The court can conceive of no possible reason why the protection, which the law in the interest of a due administration of justice and on considerations of sound public policy places about witnesses generally, should be denied to a particular witness merely because he is a physician. If this immunity is withdrawn in his case, surely the situation of the physician as a witness is not an enviable one. If he is interrogated, and required by the court to answer, concerning confidential communications in his professional keeping, and does so, he will be rewarded for his obedience to the law by being mulcted in damages to the aggrieved patient. If, on the other hand, he considers it to be his paramount duty to preserve in its integrity his obligation to his patient and refuses to testify, he will be rewarded for his professional loyalty by being committed to jail. Manifestly no such barbarous rule would be tolerated by any system of civilized jurisprudence. While the question of the civil liability of a witness for statements made by him while on the witness stand usually arises in cases of slander, there is no reason to believe that the same immunity is not enjoyed by a physician while testifying, subject to this qualification, if it may be said to be such: Where a lay witness is sought to be held liable as for slander for defamatory utterances by him while testifying in court, in addition to showing that the privilege of the occasion was abused, it must also be shown that the statements complained of were false and malicious; while in an action against a physician for divulging confidential information when testifying in the course of a judicial proceeding, it is necessary only to show that the privilege of the witness was abused. The important issue in an action against a physician for divulging confidential communications while testifying in the trial of a case is whether the testimony complained of was admissible in the case in which it was given and was relevant and pertinent to the issues. The allegation in the complaint in this case invited the inference that the testimony was given in response to questions and in obedience to the ruling of the court, in which event the defendants would not be liable, even though the testimony were both inadmissible and irrelevant.

Things a Physician by Implication Guarantees—Negligence in Treating Fracture

(Prientley vs. Stafford (Calif.), 158 Pac. R. 776)

The District Court of Appeal, Second District of California, in affirming a judgment in favor of the plaintiff, a child, for damages (amount not stated) for alleged negligence in the treatment of a fracture of the radius and ulna of his right arm, says that while in actions of this character the injury and the fact that it resulted from the professional treatment administered must be established, such finding standing alone will not justify a recovery of damages by a plaintiff. On the part of a physician who undertakes the treatment of one suffering from disease or injury, there is no implied contract that such treatment will prove a success, or that ill and serious results may not follow as the direct result of such treatment. While "not a warrantor of cures," he nevertheless by implication guarantees that he possesses that reasonable degree of learning and skill possessed by others of his profession, and that he will in the treatment of his patient exercise reasonable and ordinary care and skill in the application of such knowledge to accomplish the purpose for which he is employed. And where he possesses such degree of learning and in applying it exercises ordinary care and skill, he is not liable for results that follow. In this case, since the contrary was not made to appear, it must be conceded that the defendant possessed the requisite professional skill and learning. But there was testimony of physicians which clearly tended to prove not only that the defendant was negligent by reason of the fact that he applied the splints and bandages in a manner which made no allowance for the swelling of the arm accompanying such fractures, but also that he was negligent when, on being informed within an hour after leaving the child that he was suffering excruciating pain and complaining that the splints were too tight, he did not remove the splints himself or have them removed; and likewise negligent, when he visted the child the following morning and discovered the condition of the hand and arm, in not removing the splints in order to relieve the undue pressure which was then apparent. These facts, as well as others which the evidence clearly tended to establish, fully supported a finding of the court that the defendant, in treating the fractured arm of the plaintiff, did not exercise that degree of skill and care ordinarily exercised by the members of his profession practicing in that and similar localities. That the child's hand and arm were badly crippled and deformed was conclusively shown; and since it must be conceded on the evidence that the condition of the hand and arm was due to undue pressure caused by the fact that the splints were adjusted in a manner which did not allow for the usual swelling accompanying such cases, the question as to whether or not such omission constituted negligence was one for expert testimony.

A Severance of Hand Not Within Terms of Accident Policy

(Continental Casualty Company vs. Bows (Fla.), 72 So. R. 728)

The Supreme Court of Florida, in reversing a judgment for $500 which was rendered in favor of plaintiff Bows, holds that, in an action at law, instituted by the insured against an insurance company on an accident insurance policy which provides an indemnity "for loss of either hand by complete severance at or above the wrist," the insured is not entitled to a recovery under such provision, when the evidence adduced fails to show a complete severance of the hand at or above the wrist, even though it may establish that the small portion of the hand so left is practically of no use or service to the insured.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, NEW YORK, JUNE 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Association Medical Milk Commissions, Brooklyn, June 1-4.
American Gynecological Society, Pittsburgh, May 31-June 2.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
American Proctologic Society, New York, June 4-5.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Assn. of Am. Teachers of the Diseases of Children, New York, June 4.
Idaho State Medical Association, Sandpoint, June 25-26.
Maine Medical Association, Portland, June 12-13.
Massachusetts Medical Society, Boston, June 12-13.
Montana Medical Association, Kalispell, July 11-12.
Oregon State Medical Association, Portland, June 28-30.
Washington State Medical Association, Spokane, June 17-19.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Eleventh Annual Meeting, held at Utica, April 24-26, 1917

The president, DR. MARTIN B. TINKER, Ithaca, in the Chair

Health Insurance

The Committee on Economics presented a report which dealt largely with health insurance. Those medical men opposing health insurance were thus grouped: 1. Honest objectors who dissent on the questions of the principles involved in health insurance. 2. Objectors who are not questioning the underlying principles involved, but who fear a reproduction in America of all evils which foreign systems have shown obtain in the various foreign countries in which health insurance is in force. 3. Interested insurance men, or men who are helping the insurance companies either to defeat the proposed measure or cause a compromise between the insurance interests and the proponents of the measure so that private insurance companies may do business under the act. 4. Objectors who are considering neither public nor professional welfare, but who fear that their own incomes may be damaged. They suffer no serious pecuniary damage under the proposed act because their private incomes from medical practice are now quite small, but they see in this bill a chance to enlarge them, and hence by combining with other objectors they are endeavoring to procure for themselves the best possible bargain. 5. Objectors who, while willing to accept the principles and also the suggested outline of the medical organization, are dissatisfied with one or more details of the plan, and, therefore, condemn the whole question. 6. Finally, the great mass of the profession which is uninformed as to health insurance and opposes the measure for the time being in an effort to gain time to inform itself regarding it.

Those favoring health insurance from a medical standpoint are grouped as follows: 1. Those who do or do not believe in the principles involved, yet hold that it is a measure involving intelligent communal philanthropy, which, by levying a small general tax on the whole community, will lighten a heavy burden now carried by a part of the community least able to bear it. 2. Those who believe it will mitigate the evils of lodge practice, and hospital and dispensary abuse. 3. Those who, whether or not personally favoring it, still believe that it is the next step in social legislation in this state, and honestly think that sooner or later, and most likely sooner than it is realized, some form of this type of legislation will be enacted into law. They firmly hold to the belief that under these conditions and with this situation confronting the medical profession it is best to favor the proposed legislation, and to seek to modify the medical provisions so that the public welfare, and the economic condition of the profession, as well as the inherent interests of physicians in the maintenance of their high standards and in the advancement of preventive medicine may be safeguarded properly under the proposed legislation.

The committee feels that health insurance legislation is imminent, and in the effort to carry out its functions it suggests the following fundamentals as being necessary to safeguard all the interests concerned from the medical point of view:

MEDICAL STANDARDS FOR HEALTH INSURANCE

1. The medical profession should be represented on the Health Insurance Commission. 2. On each subdivision of the administrative departments the profession should also have definite representation. 3. There should be coordinate representation in all administrative departments by the public health authorities without, however, any increase in the police power of the health department. 4. The entire profession should be eligible to positions under the act. All legally qualified practitioners of medicine should be eligible to the "panels." 5. In the actual working of the law, provision should be made to separate the physician who treats the sick, and the physician (medical officer) who serves the funds or carriers as their official in determining the rights to cash or other benefits permitted by the fund. 6. The medical officer should be a legally qualified physician who shall have such other qualifications as the state medical advisory board may prescribe (this board being elected representatives from all the state medical societies), and who shall in addition be approved by the "panel" physicians or their elected representatives. 7. A limitation should be placed on the number any given physician is called on to treat. This to be equally applicable whether the given fund uses the panel system, the salaried physician or a combination of these two systems. 8. Once the rate of remuneration for the panel physicians is determined, the law should be made to read that when salaried physicians are employed, the salary shall in no case be less than the average sum of money earned by panel physicians in the same community. (This is to prevent the hiring of cheaper priced men to take the work from the panels.) 9. Absolutely free choice in regard to their medical attendant should be allowed patients. 10. In every community, especially in those in which the so-called "closed hospitals" exist, the commission should either establish sufficient "open hospitals" or the carriers should be made to make contracts with enough "open hospitals," so that no legally qualified practitioner shall be deprived of his right to continue to treat a patient whose removal to a hospital is imperative for any reason, the patient having chosen the given physician to treat him during the given illness. 11. The physicians on the panel should register themselves as general practitioners, surgeons or specialists, naming their specialty in a manner and form to be determined by this society, so as to prevent illegal and unethical advertising, and to keep all on the lists on a given level of equality. 12. No individual contracts between carriers and funds and physicians should be permitted, except when salaried men are employed, and then the ideas given under Paragraph 8 are to obtain. All contracts should be made with the panels as a whole, and the panels should be empowered to enforce their contracts. 13. A standard of visitation fees should be worked out, promulgated and based on the prevailing rates of medical fees in any given community so as to give a reasonable annual income to physicians who elect to practice under the act. Such a standardization of visitation fees should not necessarily be written into the law, but should be the standard to govern the carriers and the physicians in making contracts. 14. In the case of committees having to do with medical matters and disputes between medical men, these should be composed of medical men. 15. The advisory board of the commission should consist of medical men elected in proportion to their numerical strength from all the state medical societies.

RECOMMENDATIONS

1. The committee again recommends that no action be taken at this time either for or against health insurance as a whole. 2. That the Committee on Economics be empowered to continue its conferences with the proponents of the health insurance measure to the end that the medical fundamentals and standards as enumerated above be embodied in the act.

3. That this committee be further instructed to continue its efforts to elicit constructive suggestions and make a further report as more details are worked out, in the interest of this society. 4. That a tentative draft of an insurance law which conforms to the essentials and standards laid down above be approved, but that such approval shall not be construed as approving any specific bill before the legislature. 5. That in the event of a bill being introduced in the legislature, a specific study and report on the same be first submitted to the house of delegates before the society is committed either for or against such a bill. 6. That in the event of there being created in this state an official investigation commission on health insurance, this committee present to such commission the essentials and standards which this society regards as necessary to protect both the public welfare and the interests of our membership. 7. That there be added to this committee in an advisory capacity, and for purposes of closer cooperation, one member from each county society, selected by the presidents of county societies for such positions. 8. That for the purpose of closer cooperation, the chairman of the Committee on Legislation be made an ex officio member of this advisory committee during the time that health insurance matters are pending in the legislature.

Present Status of Drug Therapy

DR. WARREN COLEMAN, New York: A remedy which has been found useful by generations of physicians should not be discarded merely because its actions have not been subjected to the tests of a modern laboratory or necessarily when the experimental and clinical results are at variance. The experimental method may be lacking control quite as much as the clinical. The conclusions reached by different experimenters concerning the same therapeutic agent do not always agree. A consideration of the present attitude toward strychnin would serve to illustrate my meaning. A few years ago, opinion was practically unanimous that strychnin is a reliable cardiovascular stimulant. Today its actions are in dispute among both pharmacologists and clinicians. Dixon states that strychnin is an important cardiovascular stimulant. Sollmann denies that it has such action, except in subtoxic or toxic cases. Among clinicians, Cook and Briggs find that strychnin raises blood pressure in disease, but Cabot is unable to observe a rise. The preponderance of evidence derived from bedside studies with the sphygmomanometer indicates that strychnin does not, at least uniformly, cause a rise in blood pressure. On the strength of this evidence, many clinicians deny that strychnin possesses any value as a cardiovascular stimulant in disease. My criticism of this conclusion is that experiments lack proper control. The conclusion is based entirely on the assumption that to act as a cardiovascular stimulant a drug must increase blood pressure. I do not believe that this is true. The action of digitalis proves indisputably that it is not true, for digitalis, at times, may either not affect blood pressure or may cause it to fall. I have seen it fall 30 mm. In the face of conflicting opinions concerning the action of a drug, each clinician is compelled to depend on his own experience. My experience has led me to believe that strychnin is one of the most reliable cardiovascular stimulants. I am convinced, also, that there are characters in the pulse, discernible through the tactile and muscle sense, which no instrument of precision yet devised is capable of depicting. They are not the grosser changes that come early or late in circulatory failure, such as arrhythmia. They concern rather the tonus of the artery, the shape of the wave passing under the finger and the "push" behind the wave. It is characters such as these that are summed up in the word "quality."

Present Status of Physiologic Therapy

DR. J. J. LEVY, Syracuse: There has been a gradual drifting away from drug therapy in chronic conditions, and this has been due to the growth of sanatoriums, in which drugs play an inferior rôle in treatment, and the physical agents are the important therapeutic aids. Several advances have been made in the past few years which merit attention: 1. Psychanalysis in the treatment of nervous disorders. 2. The work of Cannon, who has shown that depressive emotions, such as anger, fear and grief, cause excessive stimulation of the endocrine glands through the sympathetic system. This chronic emotional stimulation is an important factor in the causation of many of the chronic disorders, and must be considered. 3. Use of the physical agents in the after-treatment of fractures, especially in the treatment of adhesions resulting from trauma. There is bound to be a wonderful future for physical therapy on account of the compensation act. 4. The use of the gamma rays, especially in many gynecologic conditions of a nonmalignant nature, when there is an excessive uterine hemorrhage, and in the treatment of fibroids. 5. Disappearance of the old idea that we are merely to treat cases with drugs, and the use of the physical agents, such as fresh air, sunlight, proper diet, mechanotherapy and electrotherapy, which are bound to play a more and more important part in relieving and alleviating the sufferings of humanity.

DISCUSSION

DR. L. F. BISHOP, New York: I think the older practitioners have not been willing to take up physical methods, especially in the treatment of chronic diseases. Dr. Levy has called attention to the fact that the compensation act has stimulated the efforts of physicians to get their patients back to work. That is true. We must not try to seek any special method of treating these patients but a combination of methods, a sum of a great many different methods. Diet, for instance, is of prime importance and it should be considered more carefully.

DR. MARY E. ROSE, New York: I am interested in vaccine therapy. I should not wish to treat a case of leukorrhea unless vaccines were used as an adjunct.

DR. W. DEWEY ALSEVER, Syracuse: One great difficulty which we encounter is in attempting to get the pharmacologists and physicians together. There should be more cooperation. One makes bedside observations and the other makes observations in the laboratory, which, of course, leads to many errors. With regard to strychnin, many men have for years believed it to be a cardiovascular stimulant. Dr. Coleman says this is not the case, except in toxic conditions. Strychnin is a powerful stimulant of the nervous system.

DR. JOHN M. SWAN, Rochester: I must disagree with the statement of Dr. Rose: She should not treat the leukorrhea but the woman who has leukorrhea. There is a tendency for medical men to prescribe medicines without having made a most careful study. They should not prescribe anything, except when in their judgment the agent seems capable of producing good.

DR. J. O. STRANAHAN, Rome: In a case of streptococcic infection of the throat, I advised the use of active strains of vaccines, and obtained most gratifying results.

Carrel-Dakin Treatment of Infected Wounds

DR. C. L. GIBSON, New York: The Carrel method of wound irrigation requires intelligent attention to every detail. Bacterial destruction is accomplished by the reaction on the proteins of the body. The application of the solution must be constant and prolonged. Unless administered frequently, it disappears. In experiments in using the solution in one half of the wound, the half in which it is used rapidly clears up, and the bacterial count diminishes. The solution is dangerous if introduced into the circulation, causing rapid hemolysis, and it is necessary to make a careful hemostasis. It should not be introduced into deep wounds in which there is fear of its entering an artery. Irrigation is practiced every two hours. The skin can be protected with cloths containing yellow petrolatum, and the tubes are changed according to the condition of the wound. The average wound becomes sterile in ten days. There are no constitutional symptoms, and the bacteria diminish steadily. In eighty compound fractures, not one suppurated. Great care is observed in the preparation of the solution, which depends on the titer of the chlorinated lime, the other ingredients being in accordance with this titer. If the solution irritates at all, it is wrongly made.

DISCUSSION

DR. JOHN VAN DUYN, Syracuse: There is nothing new in the method, except the scientific application of it. The only new point is the late closure of the wound. Success depends on appreciating all points of technic, getting the solution over every part of the surface, and having the solution pure. With repeated practice and patience, the results can be obtained.

DR. HENRY H. M. LYLE, New York: The method seeks to sterilize the wound by chemical means, the response of the tissues and bacteria on the surface to the solution. The flow of the solution, per se, dissolves out the tissue. It is not a continuous reaction, but delivers a definite chemical to every portion of the wound. The key to complete success is gentleness and thoroughness, in other words, good surgery. In the American Ambulance Hospital there was a drop in mortality of 11.8 to 7.8 after the use of the method. There is an economic side; it cost $2 per day per wound, and if the wound can be healed in twenty days, instead of three months, the advantage can be appreciated.

DR. ALBERT VANDER VEER, Albany: My experience in military surgery began in June, 1862, at the Battle of Richmond. It was hot weather and wounds were not dressed for four or five days. The difficulties of military surgery under such conditions are great. We made wide incisions and washed the wound with such preparations as were recommended at that time, and, after eighteen months' work, a solution was provided for the surgeon for keeping the wounds clean. It was called Labarraque's solution of chlorinated soda, and it was the best preparation the army had. What is the real difference between Labarraque's solution and Dakin's neutral solution of chlorinated soda? If the wound has been dressed, how often has the dressing to be removed? I have heard that with the continuous irrigation the dressings do not soil and the wound is kept quiet. That point was appreciated in the last eighteen months of the Civil War. The wounds were kept quiet. In amputations, silk ligatures acted as drainage tubes. Suppurating wounds were dressed twice a day, and handling of the wound was distressing. A free incision with washing by Labarraque's solution was the best treatment, and wounds healed under this method.

Treatment of Syphilis of the Brain and Cord by Subdural Injections of Salvarsanized-Mercurialized Serum

DR. S. T. NICHOLSON, Clifton Springs: Fourteen patients with syphilitic infection of the central nervous system have been treated by subdural injections of salvarsanized-mercurialized serum; nine with tabes dorsalis showed marked improvement. Two patients with paresis did not do well; in two cases diagnosed as cerebrospinal syphilis, the patients showed improvement, and a third patient discontinued treatment too early to permit conclusive observations. One of the most striking features in reviewing these cases was the difficulty of getting the patients to return for observation and treatment until the beneficial results, as evidenced by the laboratory findings, were as satisfactory as the functional improvement. In the interstitial type, in which there is gumma formation, the most rapid results as regards functional recovery were obtained. The methods of choice of intraspinal therapy are: (1) the salvarsanized serum of Swift and Ellis; (2) the Ogilvie method, and (3) the Byrnes method. I have used the first and the third combined, and the results have been so encouraging that I shall continue the method. The treatment is elastic and may easily be adjusted to the individual problem presented by each case. The mercurialized serum is a stable product, and may be used at any time after its preparation. Pain, muscular spasm, nervousness, headache, ataxia and reduced or lost sphincter control have all been relieved in full or in part, but by far the most important result is the possibility of restoration of some of the patients to their active pursuits of life.

DISCUSSION

DR. MALCOLM S. WOODBURY, Clifton Springs: None of the patients treated by this method have shown any severe reactions. I have known of instances in which quite severe reactions have followed the subdural use of medicaments. The paretic patients have not done well.

DR. HENRY LYLE WINTERS, Cornwall: My experience has been somewhat similar to Dr. Nicholson's. Good results are obtained in the active syphilitic processes. I have been able to arrest the progress of the disease in 75 per cent. of perhaps thirty cases treated in that way. In early tabes cases I have not been so successful.

(To be continued)

CHICAGO INSTITUTE OF MEDICINE

Meeting held March 30, 1917

Psychanalysis and the Practice of Medicine

DR. WILLIAM A. WHITE, Washington, D. C.—See THE JOURNAL, this issue, page 1591.

DISCUSSION

PROF. JAMES R. ANGELL, University of Chicago: Dr. White has given you so persuasive and reasonable a statement of freudianism that I somewhat hesitate to read a document which I have brought with the purpose of suggesting one fairly common view of the movement. May I say that Dr. White has just published a book, "The Mechanism of Character Formation," in which he has embodied many of the same views that he has set forth so interestingly this evening. His book is the sanest and most lucid exposition of the conceptions of psychanalysts that I have met. I venture to read a few sentences from an article by the celebrated biologist, Yves Delage (*Journal of Mental Science*, January, 1917, p. 61):

> In the event of a contagious malady making its appearance in any country, it is the duty of the medical man who first has cognizance of the evil to raise a cry of alarm, so as to ensure the adoption without delay of the necessary prophylactic measures.
>
> To sound this note of alarm is the object of this article.
>
> This new affection, which threatens to invade France, had its birth in Austria, in Vienna, some twenty years ago. . . .
>
> It is a malady without any apparent lesion of the central nervous system, a purely psychical affection; in a word, a psychosis. Its name, coined by the very persons who are its victims, is *Psycho-analysis*.
>
> Psycho-analysis, defined in the most general terms, is an affection in consequence of which the unfortunates who are attacked by it become incapable of accepting just for what they are the most insignificant gestures, the very simplest acts, the most banal words of persons with whom they have intercourse; in everything there must be discovered some profoundly hidden meaning. The detection of this pretended hidden meaning becomes for the patient a veritable obsession.
>
> Like all madmen, the psycho-analyst lives in an imaginary world, which it is necessary for us to recognize in order to understand what goes on within him.
>
> Reader, what is your opinion?
>
> I am of the opinion, you will answer, that there is no outrage on the most elementary common sense which psycho-analysts are not prepared to perpetrate in their efforts to square the very simplest and clearest facts with their preposterous notions.

Without pursuing further the quotations, you will probably agree with me that the conservative statement which we have heard this evening is perhaps freudianism at its best. I understand psychanalysis already to have reached a stage at which it has begun to subdivide into cults and schools, so that it is no longer possible to say anything about it which shall be in any universal sense true. Freud himself has changed his views, has grown and developed. His disciples have likewise changed their views, and any attempt to evaluate the movement as though it consisted of a single body of well organized opinion is impracticable.

I understand by freudianism partly a theory of the nature of the psychic organism and partly a system of therapeutics. On the therapeutic side I should hardly dare to express myself. I hazard a single comment in passing. If one is to judge psychanalysis by its *results*, it is reasonable to bring it into context with other methods which, dealing also with the same specialized group of diseases, demand that they be judged by their results and not by their antecedent medical history. While the context is in some way unfair and superficial, if one is really turning to results for a criterion, one may well ask whether Christian Science and mind cure and chiropractic and osteopathy and suggestion and hypnotism and psychic reeducation and all the other things which have had more

or less vogue in the treatment of nervous disorders may not lay equal claim to success. Frankly, I do not pretend to know what the answer is—whether the freudians' successes are more readily gained, or are more permanent, or whether they cover a wider range of cases. But I am disposed to think that the question suggested has some propriety.

Let me pass at once, however, to the few comments I have to make on the other side of the question, i. e., freudianism as a psychology, and more particularly its relation to other current psychologic beliefs.

I wish to speak first of a thing for which I think psychology greatly indebted to freudianism. I believe Dr. White did not speak about dreams in his paper. But it is a statement of the most obvious fact to say that freudianism has taught modern psychology that the dream is an absolutely significant and fundamental part of the psychic life of the individual, a thing which psychology prior to Freud had never in any frank, thoroughgoing way acknowledged. We had had all sorts of studies of dreams, but they were mostly on the descriptive level, and beyond affording a theory of the stimuli provoking the beginning of the dream, they had little to offer. They were, as a rule, wholly uninterested in the course of the dream or in its interpretation. I am far from wishing to imply that the freudian type of interpretation is altogether acceptable, but there is a rapidly growing conviction that the analysis and interpretation of dreams presents a very real problem to our psychology. In passing it will not be overlooked that psychanalysis applied to dreams is at least as old as Pharaoh, for it will be remembered that that eminent potentate had his dreams analyzed by a distinguished expert with disastrous results.

We are also under some obligation to freudianism for again turning our notice to the far prehistoric past of man as bearing essentially on our conception of how the mind has come to be what it is. From one point of view it is, of course, true that this idea has been a commonplace ever since we learned to think in spencerian and darwinian terms. We have come to believe that you cannot understand the mind of living man today without recognizing that it has in it changes which are not only prehistoric but prehuman. Nevertheless, the freudian has thrown a new light on the conception and has enabled us to take a more plastic and flexible view of the makeup of the individual than was heretofore the case. It is no more than fair, therefore, that we should acknowledge our indebtedness. We may also be allowed to voice a mild protest against the extravagant claims of certain freudians as to their originality in this matter.

So far as concerns the antiquity of man's psychic past, our modern notion is not so different from that of the freudian as might be supposed. It has been a familiar teaching of our psychologic textbooks for many years past that every individual brings into the world with him a heritage of animal instincts, appetites and tendencies, which in part reflect his descent from the race as such, and in part are due to peculiarities which may have become established in his own particular family stock. We have also come to recognize that there is mentally, as well as physically, an element of variation in every individual which comes to the surface in impulsive traits—tastes, prejudices, wishes and the like—which enjoy much the same kind of imperious claim over his attention as do those tendencies which derive more obviously from the common racial stem. Moreover, we have been for several generations thinking of the evolution of mental processes in the individual as taking place about systemized ideas and forms of reaction which at once suggest the freudian complexes. These ideational systems grow up as centers of control in childhood and adolescence, and in maturity constitute the great groups of attitudes by which we maintain our social equilibrium. Underneath them all is ever to be discerned the foundation of instinctive impulses to which I have referred above. A serious disturbance in these impulses either in the way of undue repression or in the way of exaggerated growth is sure to be reflected in disturbances of the social attitudes and of the intellectual life.

The exploitation of wish fulfilment, or the "libido" which the freudians generally indulge, if taken in its earlier form as intrinsically synonymous with purely sexual impulses, has seemed to most psychologists grotesquely one-sided. When enlarged to take in all the basic appetites of life, as in later freudian writings appears to be the disposition, the doctrine either becomes substantially synonymous with the common views described in the preceding paragraphs, or it thins out into a formula so general as to be incapable of either proof or disproof. Modern psychology has given quite as central a place to emotion as has the freudian, and in the movement headed by William James, the identification of emotional with instinctive behavior is substantially complete. The types of disturbances, therefore, which freudians find originating from thwarted wish fulfilment, so far as these wishes are incorporated in emotional experiences, are easily assimilated to the conventional psychologic views, and, so far as concerns their theoretical implications, are in no sense radically novel. Psychologists are quite ready to recognize the wide reverberation of the sexual impulses in the psychic life of the individual, but they have not for the most part been at all ready to accept the earlier and more extravagant formulations of the freudians tending to make this group of impulses absolutely predominant over all the others. Hunger and thirst, anger and fear, to mention no other items, all figure in primitive behavior in a fashion clearly distinguishable from purely sexual considerations, and any one may readily be implicated in disorders of the psychic life of the individual. To leave out these factors, or to slur them in the way in which freudians have sometimes done, has seemed to psychologists to involve a distortion of the true conception of the psychic organism.

There is another matter on which Dr. White did not dwell, although it is admirably set forth in his book, that deserves consideration in this matter, namely, the freudian notion of symbolism. No doubt you are aware how fundamental symbolism is to the freudian conception of the dream structure. You also know how, in the analysis of dreams, the psychanalyst distinguishes between the "manifest content," the thing we common-sense individuals are confronted by when we hear a dream described or face one of our own, and the symbolic implication of the dream. We are told that only when we get the true symbolic clue can we understand what the dream really means. This assertion hangs together with the conception of the dream as a device for relieving repressions and permitting suppressed wishes to come into the mind in this veiled and roundabout fashion.

It is quite out of the question in the limited time here available to enter with any thoroughness on this matter. Suffice it to say, that in a certain sense our conscious processes are all fundamentally symbolic. Language, the great medium of thought, is nothing other than an elaborate system of symbols. One does not need to turn to dream consciousness to verify the reality of the symbol as a feature of mental operations. What psychologists of the nonfreudian stripe have objected to has been the utterly weird and uncontrolled interpretation of dreams under the freudian methods of analysis. The point is not that we are always in a position to prove the falsity of the alleged freudian symbols, but that we are by no means bound to accept the wholly inconclusive evidence which the freudian himself frequently offers for his own symbolic interpretation. Not even his ingenious search of the obscenities of primitive religious rites and practices has brought conviction to the rank and file of psychologic onlookers. Moreover, there is more than a little ground to suspect that just as in the "Salpêtrière" Charcot succeeded in unconsciously establishing a group of apparently real but actually artificial hypnotic states, so the freudians are by their own procedure unconsciously generating a uniformity of symbolic interpretation which has little or no real convincing evidential basis.

Another interesting freudian device, the censor, Dr. White also passed by in silence. The censor is the freudian "god from the machine." On his behalf apparently is established the unbelievably elaborate system of symbols, by means of which he is coaxed into quiescence while these scapegraces pass out from the field of repression into the open pastures of the dream. Who he is, where he comes from, whether he is anything more than the accumulated moral habits of the indi-

vidual—these and many other interesting questions about him are left unanswered. Meantime, he presents all the external characteristics of the medieval witch.

In conclusion, I should like to comment briefly on one remark which Dr. White made in referring to the impossibility of securing a just impression of mental conditions under the ordinary procedure of the psychologic tests of the laboratory. It is quite true that our present forms of laboratory procedure are in some particulars ill adapted to the purposes of the alienist. But it would be wholly misleading to imply, as I think Dr. White perhaps unwittingly did, that all laboratory forms of procedure lack practical value. Nobody who is familiar with the wide range of applications now being made in our laboratories and elsewhere of the principles of psychology to the practical problems of education, business and industry can for a moment accept any such implication. Moreover, it should not be forgotten that the most revolutionary contribution which has been made in recent years to the study of mental retardation and mental deficiency in children is the contribution of a psychologist, Alfred Binet, and rests on distinctly psychologic methods. I venture to believe, therefore, that while in general it may be true that the psychologic laboratories are at present largely working on problems whose solutions do not contribute immediately to the interests of the alienist, it is wholly beside the mark to deny to them very large contributions of a practical kind to modern enterprises of various sorts, and in general I think it may be fairly said that the actual procedure of the psychanalyst will be found to have been in considerable degree borrowed from the extant ideas and practices of our conventional psychology.

DR. RALPH C. HAMILL: Concerning the rôle of symbols, I shall report several cases which clear the situation a little. [Dr. Hamill reported analyses of three cases.] Dr. White spoke of the habit of taking things to replace others. At one time Dr. Healy at the Juvenile Court worked on this among many other things. [Dr. Hamill then reported a case of kleptomania with analysis.] If we did not follow up the symbols in the analysis, it would be a tremendous waste of the evidence that is offered to us. We are criticized for using them and told that they may mean anything; that may be true; but if we do not use the material which is offered, we certainly cannot expect to succeed.

DR. HUGH T. PATRICK: That the majority of the most highly educated practitioners neglect the psychic factors in sickness is only too apparent to me. They make all the laboratory tests, but so far as the vital life of the patient is concerned, content themselves with a few superficial questions about overwork, worry, etc. They cultivate an intimate aquaintance with his organs and fluids, but do not know the man himself, his total character, with all his passions, desires, fears, his susceptibilities, his attitude on duty, religion, love, health, heaven and hell; and this is simply the human animal plus the resultant of his reactions, all the influences which have been brought to bear on him, certain of which we call abnormal because they are occasional. How are we to understand a given one and handle it intelligently unless we find how it came about? The question whether or not psychanalysis is the best way to find out and also the best way to treat the trouble has not yet been answered to every one's satisfaction. The value of any therapeutic procedure cannot be affirmed and estimated on *a priori* grounds, but only by intelligent comparison of its results with those of other methods. Consequently psychanalysis is not to be determined by psychologic investigation. A man who has not used it cannot know whether it is better or worse than methods he has been using, and the psychanalyst who does not understand the older methods has no grounds for evaluating his procedure. This brings me to my personal feeling, if I am entitled to an opinion, being neither a psychologist nor a psychanalyst, but an old style practitioner:

1. A good deal of psychanalysis is intelligent, painstaking and detailed history taking. This, I am convinced, pays. In many cases, after the patient's confidence has been secured, it pays to ask leading and intimate questions. That, I presume, Dr. White would repudiate as a process of psychanalysis, but I do not repudiate it as a practical procedure.

2. There can be no doubt that experiences the patient has forgotten are of importance in psychanalysis. Probably something the patient has not forgotten is overlooked because it has no apparent connection with the psychic disorder, and the doctor does not dig it out.

[Dr. Patrick gave some details of a case in which the chief thing the patient complained of, after some quizzing, was several forms of agoraphobia. The patient was nervous and apprehensive, and did not wish to call on her neighbors and friends or have them call on her. There was a dread about seeing them come, and she felt like running away. She was leading a decidedly uncomfortable life. The development of the minute details of the history of the case revealed a terrible sex trauma at one time in the patient's life, which seemed to be at the bottom of her difficulty, and an explanation on that ground cleared up the symptoms.]

3. Libido. I think this might be called in a rough way a longing for the happy life. "Be good and you will be happy" is an old admonition. To many of us, "Be happy and you will be good" is quite as applicable. Could we at one stroke make the world happy we should have a better and healthier world. Each one has an inherent hunger for something more than food, and if that is not gratified we react some way in the way of some nervous disease.

4. The statements of patients are to be discredited for three reasons: First, they may have forgotten essential things; second, they suppress things they should give you; third, they may not be fully conscious of present states of mind. For instance, a patient will honestly, vigorously and emphatically deny fear, jealousy, unsatisfied desire of some sort, when such a state is not only present, but intensely so.

5. One final simple point which I believe is sometimes overlooked by psychanalysts as well as by others: By means of psychanalysis the old suppression and substitution are laid bare; the patient sees how the symptoms come about; sees the process and understands it as the physician does; he is satisfied and hence is cured. But is he cured because the true explanation has been given him? Not at all. He is cured because he believes or feels that the true explanation has been given.

Quite recently a colleague said, "The work of a medical expert is exceedingly simple and easy. All he has to do is to tell the truth, or, failing to tell it, convince the jury that he is telling the truth." The psychanalyst or the ordinary physician may present the patient with a true analysis of his disorder, but if the explanation does not completely satisfy him he is not cured. On the other hand, a quack or a Christian Science healer may give him some spurious logic which appeals to him and he is cured.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Fourth Annual Meeting, held at New York, April 6-7, 1917
(Continued from page 1578)

Absorption of Foreign Protein by Anaphylactic Tissues and Hepatic Reaction in Anaphylaxis

DRS. W. H. MANWARING, Stanford University, Calif., and H. E CROWE: In a sensitized guinea-pig, if the lungs are repeatedly perfused with 1 per cent. foreign serum, diluted with Locke's solution, or 50 per cent. defibrinated normal blood, the lungs show typical anaphylactic reaction. Quantitative titrations of the perfusion fluid furnish no evidence of absorption or appreciable amount of foreign proteins by the anaphylactic tissues, or of destruction by blood enzymes. If 1 per cent. goat serum in 50 per cent. defibrinated normal blood is repeatedly perfused through the liver of a normal or of an immunized guinea-pig, a slight reduction in the toxicity of the perfusion fluid is usually observed on subsequent test with the isolated anaphylactic lungs. The detoxicating action of the normal or immune liver is not sufficient to render the perfusion fluid nontoxic. Perfusion made through the anaphylactic liver makes the fluid nontoxic for the anaphylactic lungs. This nontoxicity is not accompanied by quantitative decrease in the amount of goat protein

in the prefused fluid. The detoxicating action of the anaphylactic liver is, therefore, due to the explosive liberation of an antianaphylactic hepatic internal secretion.

The Specificity of Intracutaneous Absorption

DRS. G. H. SMITH and M. W. COOK, Glen Olden, Pa.: When both specific and heterologous antigens are injected into the cutaneous tissues of immunized, sensitized and normal guinea-pigs, the specific antigen is absorbed from the tissues of the immunized and sensitized animals more quickly than the heterologous antigen, while the rate of absorption of both antigens from normal animals is much the same. The antigens used were horse serum as specific antigen and goat serum as heterologous. The most marked difference was noted in the absorption of the two antigens from the skin of the immunized animals. While horse serum was absorbed with a rapidity far in excess of that exhibited by the sensitized and normal tissues, goat serum, the heterologous antigen, disappeared from the skin of the immunized pigs much less rapidly than from that of normal and sensitized animals.

Cutaneous Antibodies

DRS. M. W. COOK and G. H. SMITH, Glen Olden, Pa.: The presence of cutaneous antibodies in the skin of immunized and sensitized guinea-pigs was demonstrated by determining in the filtered emulsions of skin the content in precipitins for the specific antigen. The possibility that circulating antibodies might be responsible for the positive reactions obtained was excluded by perfusing the animals with salt solution and demonstrating the completeness of removal of circulating guinea-pig serum by titering the perfused skin emulsions with rabbit antiguinea-pig serum. While slightly positive results were obtained in these titrations, the fact that the circulating guinea-pig serum had been removed was confirmed by failure to find in the tissue emulsions any trace of a heterologous serum which was injected intravenously into the guinea-pig a short interval before death.

Classification of Strains of Meningococci

DR. G. H. ROBINSON, Providence, R. I.: Horses were immunized against type strains of meningococci. Mice were injected with the serum of these horses, and the protective value of the serum against other strains of cocci was determined. By this method, the strains tested fall into two distinct groups and another heterogeneous group, which as yet has not been completely analyzed. Of the tested strains, 40 per cent. belong in the first and second groups, and 20 per cent. in the third group. Concordant results are obtained by actively immunizing the mice and then estimating the protective value against the strains to be tested.

The Selection of Horses for the Production of Diphtheria Antitoxin by an Intrapalpebral Toxin Test

DRS. A. P. HITCHENS and E. K. TINGLEY, Glen Olden, Pa.: The work of Park and Zingher has shown that persons possessing natural diphtheria antitoxin react to injections with the production of antitoxin more readily than do those who have little or no diphtheria immunity. We thought this might be true also of horses, and that with a modification of the Schick test we could indicate the productive possibilities of horses with regard to diphtheria antitoxin. The injections were made intrapalpebrally. The technic was similar to that of Moussu in testing cattle with tuberculin. With a sterile 1 c.c. record syringe, 0.2 c.c. of diluted diphtheria toxin was injected as superficially as possible into the conjunctival mucous membrane of the lower lid. Usually the left eye was used for the test, the right for control. After twenty-four and forty-eight hours, readings were made. Fulness of lid, tenderness and watery discharge is indicated by +; lid swollen, eye half closed, ++; lid badly swollen, eye nearly closed, painful, photophobia, profuse purulent discharge, +++. The reactions usually last several days. Pseudoreactions are classed as negative.

DISCUSSION

DR. J. A. KOLMER, Philadelphia: I should like to ask Drs. Tingley and Hitchens if they titrated out the serum in negative animals for antitoxin, as in the Schick test the negative reaction indicates natural antitoxin.

DR. A. P. HITCHENS, Glen Olden, Pa.: Seventy-five per cent. of those reacting negatively became productive against 14 per cent. positively reacting. This is the first indication we have had that a horse would produce antitoxin. One horse had twenty-five units per cubic centimeter of natural antitoxin.

DR. COLLINS: Over what time did this test apply? Did you do the mallein test; if so, before or after? How long does it take horses to clear up so that if not acceptable they can be returned?

DR. A. P. HITCHENS, Glen Olden, Pa.: We are not depending on the mallein test; we think complement fixation is more reliable. The mallein test is made in the stable in which the horse is purchased. The intrapalpebral tests are made after the horse is received at Glen Olden. We have accepted all horses, regardless of reaction, so far, and may continue to do that to get more data.

DR. J. A. KOLMER, Philadelphia: How long does the reaction last? Is there necrosis of the cornea?

DR. E. K. TINGLEY: The reaction lasts about a week. The cornea is not at all affected.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

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3 *Mineral Metabolism of Experimental Scurvy of Guinea-Pig. L. Baumann and C. P. Howard, Iowa City, Iowa.—p. 650.
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11 Autointoxication and Its Treatment by (Trans) Duodenal Lavage. M. E. Jutte, New York.—p. 732.
12 *Comparative Study of Toxic Effects of Natural and Synthetic Salicylic Acids. P. Bartholow and A. McNeil, New York.—p. 738.

1. **Chemotherapy in Tuberculosis.**—The accomplishments of the laboratory of the Henry Phipps Institute up to the present in the endeavor to study tuberculosis from the chemotherapeutic point of view are summarized by Lewis as follows: "We have built up several substances which in the test tube are capable of restraining the growth of the tubercle bacillus in marked and measurably specific degree, and which when injected into the living tuberculous animal are capable of penetrating to the center of the masses of diseased tissue."

3. **Mineral Metabolism in Experimental Scurvy.**—An examination of the evidence, both experimental and clinical, obtained by Baumann and Howard leads to the view that scurvy, and perhaps the allied diseases as well, are due to the absence of certain substances in the dietary. The lack of this material appears to have a profound effect on the mineral metabolism of the guinea-pig.

5. **Metabolism and Treatment of Arthritis.**—Experiments are cited by Pemberton in which it has been possible to relieve patients of all or practically all, symptoms of diffuse arthritis by a large curtailment of carbohydrate, coincidently

with the ingestion of fat in such increased amounts as to make up or exceed this caloric deficit. When the protein intake has been kept approximately constant some such patients have actually gained weight while convalescing. This evidence by exclusion ascribes an injurious rôle to carbohydrate, is additional to that already published and is corroboratory of it. Pemberton finds it difficult to avoid the conclusion that fat, while it cannot be used with impunity in treating these cases, plays a relatively harmless rôle in marked contrast to carbohydrate. It can apparently be used in many cases to meet, more or less, the loss of weight which would otherwise ensue, and, in certain selected cases, to meet it entirely or even to cause the patient to gain weight. The difference in the effects of large amounts of carbohydrate when ingested by normal individuals and by subjects of rheumatoid arthritis is not reflected in the carbon dioxid tension of the alveolar air under the limited conditions of the experiments.

8. **Treatment of Head Colds.**—Head colds according to Reilly are always infections. He treats the condition first, by restricting the diet. Partaking of large quantities of protein food increases the nasal congestion. Second, purgation is caused early and often. Third, a hot mustard foot bath also acts as a derivative, and is particularly valuable on the first and second day of the cold. Fourth, the stereotyped advice should always be given to avoid draughts, wet feet and crowded places. Fifth, tobacco must be interdicted for a few days at least, and alcohol in the form of beer, whisky or rum is absolutely contraindicated. Sixth, Reilly has little use for drugs, especially quinin and Dover's powder. Local treatment is by far the most important, he says. He uses an alkaline spray, repeated until a mild blowing of the nose is not followed by mucopus. Ordinarily after the alkaline spray the following spray is used: phenol, 3 minims; iodin, 6 grains; potassium iodid, 6 grains; peppermint water, ½ ounce; glycerin, ½ ounce; water, sufficient to make 3 ounces. This is sprayed until it reaches the throat. After this an oil spray containing oil of cloves, camphor, menthol, oil of pine and liquid petrolatum is used.

10. **Castration in Osteomalacia.**—Five years after castration the case reported by Elliott and Nadler shows no actual improvement in bone structure. A probable remission has occurred, which may have been influenced by the operation. In the authors' opinion the result of castration in this patient would seem to indicate that osteomalacia is not a disease of the sexual glands.

12. **Toxic Effects of Salicylic Acid.**—In order to institute a comparison, Bartholow and McNeil examined the acids and their sodium salts, and made some clinical studies of the action of the following substances described as complementary: cinnamate of sodium, phthalic acid, saligenin, salicin, methyl salicylate. The authors found that the difference between the natural and synthetic salicylates in man is somewhat more distinct. In the case of the natural acid when administered to adults there was less gastric disturbance, the cerebral effects were slighter, and in general it may be said that this substance is better borne than the commercial acid. It is not so toxic in very large doses, though when more than 75 grains are given in twenty-four hours there is a tendency to delirium in the susceptible to salivation and flushing of the integument. The noises in the ears are noticed on the second day, as a rule, of administration. It seems clear that the natural acid has less cumulative effect.

13. **Joint Reaction to Mechanical Injury.**—In none of the experimental cases studied by Paulson did injury to the knee joint, in the form of removal of the articular cartilages and a thin layer of the underlying bone, cause any apparent loss of efficiency of the joint. In all the cases there was regeneration, to greater or less extent, of bone and cartilage, except in a case in which infection was present. The bone apparently regenerated from the osteogenetic tissue in the marrow spaces. The regeneration of cartilage apparently took place in the following manner: (1) degeneration of a few cells at the border of the injury; (2) proliferation and hypertrophy of the next layer of cells; (3) outgrowth of cartilage from the remaining cartilage, periosteum and tissue of the marrow spaces; (4) transformation of the fibrous tissue into fibrocartilage, the process being apparent first in the vicinity of the old cartilage and at the junction of the fibrous tissue and bone, (5) and finally transformation of the fibrocartilage into hyaline cartilage. In some cases there was formation of exostoses, and this was very marked in one case. In these cases there were large areas of apparently isolated cartilage, and bone formation seemed to be progressing from them. The bone formation in the exostoses was all of the cancellous variety.

14. **Osteochondromatosis of Knee Joint.**—In the case reported by Henderson there was a history of severe trauma at the onset. The roentgenogram revealed also multiple loose bodies in the knee joint. The specimen removed from the femur at operation showed the tumor to be the osteochondroma type, the cells not appearing malignant. The synovial membrane of the joint apparently was participating in the new growth. The synovia was hypertrophied and pouched. In places the pouches were pedunculated, with the tips becoming cartilaginous; some were of good size, being larger than a pea. The new growth from the bone had already broken through into the joint by way of the internal condyle, forming an exostosis in the joint cavity itself. After operation the tumor rapidly recurred and increased in size. A second specimen showed a mixed cell sarcoma, and amputation was performed. When the patient was dismissed the roentgenogram showed metastasis in the lungs.

15. **Mercurialized Serum in Tabetic Spinal Arthropathy.**—Billington gave his patient at intervals of two weeks, four intradural injections of mercurialized serum (1/40 gr. bichlorid at each dose), followed by potassium iodid and inunctions of mercury for a year. At the fourth injection, the spinal fluid examination showed practically no change. The reactions were rather severe, and further injection was refused. He was then put in a plaster jacket, with moderate correction, for two months, followed by a brace, which he still wears. The gastric crises and lightning pains ceased immediately, and have not returned, except for an occasional slight leg pain which he scarcely notices. He has gained about 10 pounds in weight, and he says both bowel and bladder control are much improved. His gait is somewhat steadier, probably due to increased strength and the spinal support. Spinal deformity is somewhat less noticeable, and flexibility is considerably decreased in the lumbar region, a certain amount of fixation having taken place. It is now fifteen months since the beginning of treatment. The patient's general condition is definitely improved, but there has been no apparent checking of the progress of the vertebral disease.

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13 *An Experimental Study of Reaction of Rabbit's Joint to Mechanical Injury. J. E. Paulson, San Francisco.—p. 337.
14 *Osteochondromatosis of Knee Joint. M. S. Henderson, Rochester, Minn.—p. 351.
15 *Tabetic Spinal Arthropathy (Charcot's Spine) Treated by Intradural Injections of Mercurialized Serum. R. W. Billington, Nashville, Tenn.—p. 357.
16 Scoliosis. E. G. Abbott, Portland, Me.—p. 362.
17 New Methods in Preparation and Use of Plaster-of-Paris. R. C. Barrett, Philadelphia.—p. 418.

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19 Action of Vanadium with Particular Reference to Syphilis. F. Proescher, and H. A. Seil, Pittsburgh; A. W. Stillians, Chicago. —p. 347.
20 Procedure for Serum Diagnosis of Syphilis Especially Recommended for Hospital Routine. J. Bronfenbrenner and M. J. Schlesinger, Pittsburgh.—p. 406.
21 Palmar Syphilids. H. Fox, New York.—p. 422.
22 *Series of Ruptured Aortic Aneurysms. P. G. Woolley, Cincinnati. —p. 426.
23 Serological Diagnosis of Syphilis with Special Reference to Hecht-Gradwohl Test. R. B. H. Gradwohl, St. Louis.—p. 450.
24 Influence of Wassermann Test on Surgery. T. L. Rhoads, Cristobal.—p. 468.

25 *Syphilis of Duodenum; Report of Case. J. L. Mortimer, Denver.—p. 473.
26 Experimental Syphilis Produced Through Local Applications to Mucous Membranes. M. A. Reasoner, Washington, D. C.—p. 478.

22. **Ruptured Aortic Aneurysms.**—The cases which form the basis of Woolley's communication form an interesting group because they illustrate the directions which aneurysms may take in relation to other organs. In one case the perforation was external, through the sternum; in one it was into the superior vena cava; in one it was into the left pleural cavity by way of the diaphragm; in one it was retroperitoneal; in one it was into the left pleural cavity by way of the left lung; in two it was into the left main bronchus; in one it was into the left ventricle; and in one it was into the pulmonary artery; six were therefore aneurysms which sprang from the arch of the aorta. Two were developed from the abdominal aorta.

25. **Syphilis of Duodenum.**—A diagnosis of duodenal syphilis was made by Mortimer for the following reasons: 1. History of onset one year after marriage, the birth of a syphilitic child; husband died of paresis. Both Wassermann reactions and symptoms cleared up previously under antisyphilitic therapy. 2. Presence of a hard irregular mass in the right hypochondrium. 3. Roentgen signs which show decisive evidence of postpyloric pathology. 4. Positive Wassermann reaction. 5. The marked improvement under antisyphilitic therapy, the patient stating that she was entirely free of abdominal pain and tenderness. The diminution in the size of the tumor.

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27 Kidney with Double Pelvis and Double Ureter; Nephrolithiasis; Pyonephrosis; Nephrectomy; Report of Case. L. S. Pilcher, Brooklyn.—p. 534.
28 Problem of Prostatic Obstruction. J. H. Cunningham, Jr., Boston.—p. 538.
29 Congenital Strictures and Spiral Twists of Ureters; Report of Case. D. N. Eisendrath, Chicago.—p. 552.
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35 *Influence of Venous Collateral Circulation of Kidney on Hydronephrosis. J. D. Barney, Boston.—p. 597.
36 *Unusual Case of Renal Tuberculosis. B. A. Thomas and J. C. Birdsall, Philadelphia.—p. 602.
37 Case of Bilateral Renal Calculi. E. O. Smith, Cincinnati.—p. 606.
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39 Recent Observations in Cystoscopic Technic. W. F. Braasch, Rochester, Minn.—p. 615.
40 *Value of Bacillus Bulgaricus in Treatment of Coccus Infections of Bladder. R. F. O'Neil, Boston.—p. 621.
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42 *Use of Radium and Punch Operation in Desperate Cases of Enlarged Prostate. H. H. Young, Baltimore.—p. 633.
43 Sidelights on Prostatic Abscess. J. F. McCarthy, New York.—p. 642.
44 Nongonorrheal and Nontuberculous Epididymitis. I. S. Koll, Chicago.—p. 646.
45 Surgical Significance of Estimation of Nonprotein Nitrogenous Constituents of Blood. H. J. Scherck and R. B. G. Gradwohl, St. Louis.—p. 648.
46 *Results of Operations for Tumors of Breast; Benign and Malignant. P. M. Pilcher, Brooklyn.—p. 654.

30. **Anomalies of Urinary Tract.**—Krotoszyner reports the following cases: 1. Renal hypoplasia (rudimentary kidney) and hydro-ureter on the left side. 2. Horseshoe kidney (fused type); bilateral nephrolithiasis; pyonephrosis of right side. 3. Double bladder in a prostatic; ascending pyelonephritis. 4. Congenital diverticulum of the bladder, hypertrophy of prostate, chronic cystitis.

35. **Collateral Circulation in Hydronephrosis.**—The conclusions drawn by Barney from his experimental observations are: 1. Sudden, complete and permanent obstruction and one ureter produces hydronephrosis in animals in the vast majority of cases, but (2) atrophy of the kidney may develop in rare instances; (3) when hydronephrosis occurs the venous collaterals of the kidney are well developed; when atrophy of the kidney takes place it is due to a lack of development of these collaterals; (4) atrophy of the kidney may be produced experimentally, by simultaneous ligation of the ureter and of the veins which maintain the collateral venous circulation of the kidney; (5) when the obstruction to the ureter is partial or intermittent the hydronephrosis is of greater size than when the obstruction is complete, sudden and permanent, for in the latter event, urinary secretion ceases before the venous collateral circulation has time to develop.

36. **Renal Tuberculosis.**—In this case a calcified plaque in the internal iliac artery was mistaken for a ureteral calculus. It subsequently proved at operation to be a reno-ureteral tuberculosis without calcification.

40. **Acid Urine in Coccus Infections of Bladder.**—In all cultures of O'Neil's cases of incrusted cystitis the culture showed a growth of streptococci and staphylococci, *Bacillus proteus* and *B. coli*. Beyond this no attempt was made to plate out any given strain of bacteria. The cultures after treatment showed, with two exceptions, colon bacilli only. Emulsions made from tablets were used in the earlier cases. These were not very satisfactory. Later the liquid culture was used. Twenty c.c. were injected into the bladder through a catheter after preliminary cleansing irrigations. From the analysis of seven personal cases, O'Neil feels justified in drawing the following conclusions: 1. That the incrustations met with in this form of coccus infection, with an alkaline urine, can be removed more rapidly and permanently by the acidulation of the urine by the bacteria than by any other means. 2. That in certain cases in which the incrustations are associated with alkaline urine and a marked tendency to the formation of soft phosphatic calculi, their recurrence may be prevented to a considerable extent by maintaining a strongly acid urine by this means. 3. That the method may be of value in the treatment and prevention of the incrustations sometimes seen in urinary wounds. 4. That the treatment to be of value must be carried out at regular intervals and will show better results in private practice or when patients are confined in the hospital than when treated in outpatient departments. 5. That the method is of little permanent value where the infection is not confined to the bladder. 6. That the treatment is entirely without any untoward effects.

42. **Radium and Punch Operation in Prostate Hypertrophy.**—Young's report serves to show that with radium the hypertrophied prostate may be made to atrophy so that a minor operation will suffice to restore normal urination. The long duration of treatment, however, suggests that it be confined to cases with severe complicating conditions which preclude perineal prostatectomy.

46. **Results of Operations for Breast Tumors.**—Pilcher's paper is summarized as follows: In the early period in the development of every cancer of the breast it is absolutely curable. If this fact were brought home to every woman, there would no longer be any deaths from cancer of the breast. Even a large and long active surgical experience does not qualify any man to say positively in many cases of chronic cystic mastitis (secondary cytoplasia) whether there is a malignant element present or not. Recognizing the frequency with which the supraclavicular glands are invaded in tumors in the upper quadrants of the breast, it is urged that every advanced case should have the benefit not only of axillary gland dissection, but also removal of the supraclavicular glands as a part of the primary operation. Cases of recurrence, even in which the opposite axilla or other breast becomes involved, are not necessarily fatal.

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47 Primary Pupillary Response to Light an Autonomic Reflex. Argyll-Robertson Pupil. J. Dunn, Richmond, Va.—p. 193.
48 Excision of Tarsus in Trachoma. G. F. Suker, Chicago.—p. 210.
49 Diplobacilli in Corneal Ulcers. H. W. Scarlett, Philadelphia.—p. 219.
50 Tendo Muscle Lengthening and Description of Special Forceps. H. Lowell, Boston.—p. 224.

51 Dacryocystorhinostomy. A. Wiener, New York.—p. 227.
52 Fibrolysin in Treatment of Ocular Diseases. R. S. Lamb, Washington, D. C.—p. 233.
53 Case of Congenital Enophthalmos in Connection with Complete Absence of Abduction and Retraction of Eyeball in Adduction. A. Lutz, Habana, Cuba.—p. 243.
54 Case of Optic Hallucinations with Hemianopsia. O. Schirmer, New York.—p. 247.
55 Case of Toxic Choroiditis Secondary to Chronic Alveolar Abscess, Subsequently Treated with Vaccine Therapy. E. H. Rowe, Baltimore.—p. 251.
56 Anterior Chamber Syringe for Washing Out Cortical Matter After Cataract Extraction. J. A. Andrews, New York.—p. 256.
57 Value of Eye Manifestations Complicating Fractured Skull. M. Cohen, New York.—p. 258.

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58 Treatment of Osteomyelitis. C. C. Simmons, Boston.—p. 653.
59 *Personal Experience with Carcinoma of Cervix. L. Davis, Boston. —p. 660.
60 Intestinal Venous Stasis; Diffusion of Bacteria and Other Colloids. F. B. Turck, New York.—p. 663.

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61 *Recent Investigations on Bacteriology of Acute Poliomyelitis. L. Hektoen, Chicago.—p. 687.
62 Mouth Infections in Their Relation to Systemic Disease. P. A. Hudnut, Northampton.—p. 695.
63 Incidence of Intestinal Adhesions as Factor in Chronic Intestinal Stasis in Epilepsies. H. Caro, Palmer.—p. 697.
64 *Respiratory Suction an Aid in Surgical Shock. W. T. Porter, Boston.—p. 699.

59. **Carcinoma of Cervix.**—Out of the total of fifty-one cases reported on by Davis, thirty-three were subjected to some palliative operation, for the most part curettage and cauterization. The Percy technic has been carried out completely in eight cases only. In four other cases the Percy technic was employed so far as the use of the heating iron was concerned, but without ligation of the internal iliacs. In all but one case in which the Percy method was employed the disease seemed hopelessly advanced, certainly too much so to permit of radical removal. The one favorable case in which a radical hysterectomy might have been done, but in which the Percy operation was adopted, has shown extension of the disease within six months and the patient is now dying, one year from date of operation. There have been three cases in which the Percy method was used in which very distressing urinary fistulas developed. There was one case of moderate secondary hemorrhage, controlled by packing. As to end results, curettage and cauterization have given a short period of immunity from hemorrhage and foul discharge of from six weeks to six months. There has been no noticeable lessening of pain. Of the twelve cases in which the Percy technic was carried out in whole or in part, four have not been heard from since. Two died of the disease, respectively, three and five months after operation. One patient is at present dying of the disease one year after operation. Three patients have been heard from three to eight months after operation with unmistakable evidence of disease in the pelvis; one of these, however, seems to have been greatly relieved symptomatically. One patient reports by letter six weeks after operation as feeling relieved. One patient, six months after operation, although suffering from urinary fistula, presents no evidence of malignancy. From this experience Davis feels little enthusiasm for the Percy operation.

61. **Investigations on Bacteriology of Poliomyelitis.**—The work and reports of George Mathers are reviewed and analyzed by Hektoen. The coccus discovered by Mathers is discussed as to its cultural peculiarities, morphologic characteristics, filterability, effects in animals, resistance to glycerol, and reactions of immunity. Experiments with monkey passage virus and poliomyelitis in the rabbit are also considered with special reference to the changes caused in the nervous system of this animal by the coccus under consideration. The micrococcus appears to have many properties in common with the virus of the disease and with the minute organism described by Flexner and Noguchi. In various aerobic cultures, that is, blood agar, the coccus grows more or less like a streptococcus of the viridans type, and herein it differs from the minute organism of Flexner and Noguchi, which is not known to grow under aerobic conditions at all. However, Hektoen concludes that the exact significance of this coccus in epidemic poliomyelitis cannot be determined now. The number of cases studied for its presence is too small to permit the conclusion that it occurs constantly in the disease or any form of the disease; in the few instances in which injections of cultures have resulted in a condition indistinguishable from what is accepted as poliomyelitis in the monkey, the possibility that another and more important microbe may have been present cannot be excluded; the true poliomyelitic nature of the very interesting lesion caused by the coccus in rabbits has not been confirmed by proper tests on monkeys; and the results of extended immunization experiments are also lacking.

64. **Respiratory Suction Aid in Surgical Shock.**—By increasing the carbon dioxid in the inspired air, deep and rapid respiration is produced and the blood is pumped from the veins into the heart. Porter says that the necessary amount of carbon dioxid is not injurious. To an animal it can be given from a gas tank discharging through a Woulfe bottle into a T tube, the short limb of which is attached to the tracheal cannula. In man, rebreathing may be employed. The patient may breathe in and out of a rubber bathing cap, previously inflated with a Davidson syringe. When oxygen hunger approaches, the cap is removed. In a moment or two the experiment may be repeated. In the course of the past two months, March and April, Porter has with carbon dioxid produced deep and rapid respiration in many animals in whom surgical shock had been brought on by injecting oil into the external jugular vein. The diastolic arterial pressure in these animals was often dangerously low. In every case, the diastolic pressure rose 15 to 30 mm. of mercury. Such a rise, for example, from 50 to 70 mm., carries the pressure out of the danger zone. The author has made as yet no observations on men with shock.

Bulletin of Johns Hopkins Hospital, Baltimore

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65 *Sacro-Iliac Strain. W. S. Baer, Baltimore.—p. 159.
66 Mechanism and Clinical Significance of Anaphylactic and Pseudo-Anaphylactic Skin Reactions. J. A. Kolmer, Philadelphia.—p. 163.
67 *Tuberculosis of Tongue. W. C. White and C. H. Marcy, Pittsburgh.—p. 174.

65. **Sacro-Iliac Strain.**—Kernig's sign is positive in the diagnosis of sacro-iliac strain, says Baer. If one flexes the fully extended leg on the abdomen, the amount of that flexion is naturally limited (Kernig's sign), and pain is referred to the sacro-iliac joint behind. This is due to the contraction and spasm of the hamstring muscles. Kernig's sign is absent in the opposite leg, but at times flexion of the fully extended leg on the abdomen of the good side causes pain referred to the sacro-iliac joint of the bad side. At times there is an undue mobility which may be made out at the sacro-iliac joint by firmly grasping the ilia in the hands and forcing them together. This, however, is rare, although Baer has seen it in sacro-iliac strain following the puerperium and in the direct traumatic variety.

67. **Tuberculosis of Tongue.**—White and Marcy report the case of a tuberculous man, aged 30, who developed a tuberculous ulcer on his tongue. The chief symptoms of the ulcer were soreness and swelling. The pain was so severe when food was taken that the patient could not eat. He lost 20 pounds in five months. His home physician treated the ulcer locally with silver nitrate and iodin for five months. Only by the use of cocain locally was he able to eat. He lost 10 pounds in weight in two months in the hospital, and the ulcer continued to increase in size. The surgeon's advice was to excise the tongue wide of the lesion. The authors suggested that a trial be given to injection of tuberculin into the base of the lingual ulcer. This was done. At the end of twenty-four hours the tongue was swollen, red and a little more painful. At the end of forty-eight hours it was still slightly swollen, but not sore, and the increased redness was fading. After this the ulcer commenced to diminish in size, until at the end of one week it was not more than half the

size and the patient was able to eat without pain. Two weeks later a second dose was given in the same way. One week later a reduction again of approximately 50 per cent. in the size of the ulcer. A third injection was given two weeks after the second. Twelve days later the ulcer had almost completely healed and he was again rapidly improving in weight and health. A fourth dose of tuberculin was given when the ulcer was quite healed, and only a small fissure left to mark its former site.

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68 Focal Infection. H. M. Ginsberg, Pensacola.—p. 289.
69 Surgical Conception of Pyorrhea. C. Hutchinson, Pensacola.—p. 291.
70 Management of Confusional States with Special Reference to Pathogenesis. T. A. Williams, Washington, D. C.—p. 292.
71 Cardiopyloric Anastomosis. M. H. Smith, Jacksonville.—p. 298.
72 Obstetrics Outside Maternity Hospital and Square Deal to Mother and Her Offspring, or Obstetrics in Rural Home. P. L. Goss, Mulberry.—p. 300.
73 Oral Affections and Their Effect on General Health. W. S. Hall, Pensacola.—p. 304.
74 Review of One Hundred and Forty-Eight Cases. J. S. Turberville, Century.—p. 307.

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75 Annular Macular Syphilid, or So-Called Neurosyphilid. H. Fox, New York.—p. 215.
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77 Practical Points in Roentgen Therapeutics. C. A. Simpson, Washington, D. C.—p. 231.
78 Erythrodermie Congenitale Ichthyosiforme. G. M. MacKee and I. Rosen, New York.—p. 235.
79 Case of Favus. R. A. McGarry, Ann Arbor, Mich.—p. 253.

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80 Immunochemical Studies of Proteins of Cat Hair. R. P. Wodehouse, Boston.—p. 227.
81 Immunochemistry of Proteins of Horse Dander. R. P. Wodehouse, Boston.—p. 237.
82 Immunochemistry of Proteins of Dog Hair. R. P. Wodehouse, Boston.—p. 243.
83 *Hyperleukocytosis and Its Bearing on Specific Therapy. H. Zinsser and E. Tsen, New York.—p. 247.
84 Intracutaneous Absorption of Antigen. G. H. Smith and M. W. Cook, Glenolden, Pa.—p. 269.
85 Influence of Typhoid Vaccine on Tuberculous Guinea-Pigs. H. Baldwin and E. S. L'Esperance, New York.—p. 283.
86 *Complement Fixation in Tuberculosis with Partial Antigens of Deyke and Much. A. C. Woods, G. E. Bushnell and C. Maddux, Fort Bayard, N. M.—p. 301.
87 *Complement Fixation in Acute Anterior Poliomyelitis. J. A. Kolmer and A. E. Freese, Philadelphia.—p. 327.

83. **Hyperleukocytosis and Specific Therapy.**—The experiments reported by Zinsser and Tsen show that when homologous gram-negative bacilli are injected into immunized animals there seems to be a definitely higher leukocytosis in the immunized animals than in normal controls similarly treated. It seems reasonably clear that an animal reacts more energetically so far as its mobilization of leukocytes is concerned when reinjected than does a normal animal treated with the same variety and quantity of bacteria. When immune animals are treated with heterologous bacteria; that is, when prodigiosus bacilli or colon bacilli are injected into typhoid immune animals and vice versa, there seems to be no specific difference in response. The injection of leukocytic extract does not arouse as vigorous a leukocytic response as does the injection of bacillary protein. The authors coordinated their observations by assuming that when an animal is injected with gram-negative bacilli, in the presence of which this poison is formed with relative ease, the animal is intoxicated, which accounts for the preliminary leukopenia, and then reacts vigorously if the dose has been moderate and the toxemia easily overcome. If the dose is too large and the toxemia too profound, or the injection cumulative in so far as it has followed too soon on another injection, the reaction is less vigorous.

86. **Complement Fixation in Tuberculosis.**—Partial antigens were prepared by the authors from the tubercle bacillus, by disintegrating the bacilli in 1 per cent. lactic acid, filtering, and extracting with alcohol, at varying temperatures, and with ether. The resulting antigens appear to be composed chiefly of the various fatty acids, and neutral fat of the tubercle bacillus together with traces of protein. One hundred and seventy-six normal and tuberculous serums were titrated against these partial antigens, and against whole bacillus emulsion antigen. Seventy-two of the serums obtained from clinically normal cases, and 91 per cent. of the serums from cases classed clinically as inactive tuberculosis reacted negatively to these antigens. Ninety per cent. of the serums from cases classed clinically as incipient tuberculosis, 87 per cent. of the serums from cases classed as active tuberculosis, and 92 per cent. of the serums from advanced tuberculous cases reacted positively to the partial antigens. Sufficient syphilitic serums could not be obtained to make any determination of the proportion of syphilitic serums which would react positively to these antigens, but judging from twenty-seven positive Wassermanns obtained at the same time the serums were examined, there appears to be little relationship between the Wassermann reaction and the reaction to the partial antigens.

87. **Complement Fixation in Acute Poliomyelitis.**—Complement fixation tests conducted by Kolmer and Freese with the cerebrospinal fluids of 130 persons suffering with acute anterior poliomyelitis and salt solution extracts of various tissues yielded from 6 to 16 per cent. weakly positive reactions with extracts of spinal cord, pons and medulla, cerebellum, cerebrum and 15 to 17 per cent. positive reactions with extracts of poliomyelitic liver and spleen. Control antigens of non-poliomyelitic human and rabbit liver yielded negative reactions, while extracts of spleen yielded from 5 to 7 per cent. positive reactions. With alcoholic extracts of these tissues the tests were uniformly negative. The cerebrospinal fluids of normal persons and children suffering with whooping cough and measles yielded negative reactions with all extracts. The cerebrospinal fluids of several paretics yielded strongly positive reactions with all salt solution and alcoholic extracts. Complement fixation tests with the serums of fifty-eight persons in the various stages of acute anterior poliomyelitis yielded slightly positive reactions with 2 to 4 per cent. of serums with salt solution extracts of spinal cord, pons and medulla, cerebellum and cerebrum. Tests with extracts of poliomyelitic liver and spleen were uniformly negative, as were all tests employing alcoholic extracts of these different tissues. With polyvalent suspensions of diplococci and streptococci cultivated from persons suffering with acute anterior poliomyelitis, weakly positive reactions were observed with 6 to 9 per cent. of cerebrospinal fluids of thirty-five persons suffering with the disease; with serums all tests were negative, as likewise all tests with fluids and serums employing suspensions of the diphtheroids and gram-negative bacilli cultivated from poliomyelitis cases.

Journal of Infectious Diseases, Chicago

May, XX, No. 5

88 Oxidase of Rhus Diversiloba. J. B. McNair, Berkeley, Calif.—p. 485.
89 Anaphylatoxin and Anaphylaxis. Trypanosome Anaphylatoxin. F. G. Novy, P. H. DeKruif and R. L. Novy, Ann Arbor, Mich.—p. 499.
90 Agar Anaphylatoxin; Guinea-Pig Serum. F. G. Novy and P. H. DeKruif, Ann Arbor, Mich.—p. 536.
91 Id. Rabbit Serum. F. G. Novy and P. H. DeKruif, Ann Arbor, Mich.—p. 566.
92 Id. Rat Serum. F. G. Novy and P. H. DeKruif, Ann Arbor, Mich.—p. 589.
93 Effect of Multiple Doses of Anaphylatoxin. F. G. Novy and P. H. DeKruif, Ann Arbor, Mich.—p. 618.
94 Effect of Intravenous Injections of Agar. F. G. Novy and P. H. DeKruif, Ann Arbor, Mich.—p. 629.

Journal of Parasitology, Urbana, Ill.

March, III, No. 3

95 Sporozoon Parasites of Fishes of Woods Hole and Vicinity. C. W. Hahn.—p. 91.
96 Cercariae of Bitter Root Valley, Montana. E. C. Faust. Urbana.—p. 105.
97 Development of Gregarines and Their Relation to Host Tissues; (1) in Stenophora Lactaria Watson. M. W. Kamm.—p. 124.
98 Cercariae of Natal. F. G. Cawston.—p. 131.
99 Species of Nosema Infecting Attacus Cynthia Drury. S. Ishiwata Tokyo, Japan.—p. 136.

Medical Record, New York

May 12, XCI, No. 19

100 Osteochondritis Deformans Juvenilis—Perthes' Disease. V. P. Gibney, New York.—p. 793.
101 Blood Pressure Formulas; Their Value and Significance. F. A. Faught, Philadelphia.—p. 796.
102 Blood Pressure from Life Insurance Standpoint. R. M. Goepp, Philadelphia.—p. 801.
103 Blood Pressure from Standpoint of Surgeon. G. P. Mueller, Philadelphia.—p. 803.
104 Treatment of Chronic Catarrhal Deafness. B. Robinson, New York.—p. 804.
105 Handicap Due to Concomitant Diseases in Tuberculosis. R. L. Ochsner, San Francisco.—p. 805.
106 Blood Donors in War Surgery. F. Robbins, New York.—p. 807.

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107 Hemorrhages of Pregnancy Including Placenta Praevia. E. P. Davis, Philadelphia.—p. 839.
108 Radium Emanation Waters. C. E. Field, New York.—p. 843.
109 Medical Treatment of Chronic Intestinal Stasis. M. Einhorn, New York.—p. 847.
110 Therapeutic Use of Extract of Corpus Luteum. H. E. Happel, St. Louis.—p. 848.
111 Adenoiditis. C. M. Cobb, Lynn, Mass.—p. 850.
112 Epilepsy and Its Treatment in Dispensaries. L. Grimberg, New York.—p. 852.
113 Hematuria; Its Clinical Significance. H. W. E. Walther, New Orleans.—p. 854.
114 Folliculosis in Conjunctiva. J. A. Kearney, New York.—p. 855.

New York Medical Journal

May 12, CV, No. 19

115 Theories Concerning Pregnancy, Labor and Placental Gland. S. W. Bandler, New York.—p. 865.
116 Uterine Fibroids. J. F. Erdmann, New York.—p. 872.
117 Intraspinous Injections of Neosalvarsanized Serum in Nervous and Mental Diseases. A. Gordon, Philadelphia.—p. 873.
118 Factors Which Affect Results in Treatment of Prostatic Obstruction. W. E. Lower, Cleveland.—p. 877.
119 Modern Diagnosis and Treatment of Syphilis. B. A. Thomas and C. H. J. Barnett, Philadelphia.—p. 879.
120 Cardiac Therapy. J. N. Upshur, Richmond, Va.—p. 884.
121 Frigolability. D. M. Kaplan, New York.—p. 886.
122 Favus of Scalp and Eyelids; Report of Case. W. B. Weidler, New York.—p. 887.
123 Lingual Tonsil. J. L. Mayhaum, New York.—p. 887.

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124 Exploratory Tympanotomy. H. Hays, New York.—p. 913.
125 *Amyotrophic Lateral Sclerosis. J. H. W. Rhein, Philadelphia.—p. 915.
126 Suprapubic Prostatectomy. N. P. Rathbun, New York.—p. 919.
127 Tuberculosis of Knee Joint in Adult in which Operations Were Done Eliminating Motion by Producing Fusion of Femur and Tibia. R. A. Hibbs, New York.—p. 922.
128 Surgical Aspects of Male Sterility. A. L. Wolbarst, New York.—p. 926. To be continued.
129 Pseudohermaphroditism. W. S. Gottheil and C. Goldenthal, New York.—p. 932.
130 Vital Statistics of Old Age. L. I. Dublin, New York.—p. 936.
131 Hydrocephalus, Spina Bifida and Double Talipes Calcaneus Occurring in Same Fetus. C. B. Conklin, Washington, D. C.—p. 937.
132 Lessons from Past and Possibilities for Future. D. M. Lewis, New Haven, Conn.—p. 939.
133 Sporadic Leprosy in Connecticut. M. J. Morrissey, Hartford, Conn.—p. 940.

Ophthalmic Record, Chicago

April, XXVI, No. 4

134 Contusion of Eye, with Rupture Extending Across Optic Disk. E. A. Shumway, Philadelphia.—p. 167.
135 Case of Parinaud's Conjunctivitis. H. V. Dutrow, Dayton, Ohio.—p. 171.
136 Some Causative Factors in Glaucoma in London Hospitals During Present Hostilities. S. D. Maiden, Council Bluffs, Iowa.—p. 174.
137 Occurrence of Ocular Defects and Disease at Massachusetts State Reformatory for Women at Sherborn. L. W. Jessaman, Framingham, Mass.—p. 178.
138 Injury of Sympathetic in Enucleation. T. J. Dimitry, New Orleans.—p. 183.
139 Precision Trial Case and Test Frame, C. F. Prentice, New York.—p. 187.
140 Clinical Consideration of Migraine. J. A. Litchy, Pittsburgh.—p. 192.

Public Health Journal, Toronto

April, VIII, No. 4

141 Problem of Illegitimacy; General Practitioner's Point of View. W. F. Clark, Toronto.—p. 83.
142 Illegitimacy; Attitude of Social Worker. M. J. Knisely Toronto.—p. 86.
143 Nurse Midwife. F. J. Taussig.—p. 89.
144 Survey of Spreading Health Insurance Movement. I. M. Rubinow.—p. 92.
145 Principles of Sewage Treatment. J. R. Ellis.—P. 101.
146 Infantile Increase and Child Conservation. H. B. Weston, Winnipeg.—p. 111.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

April, XXV, No. 4

147 Radium; Statistical Study; Report of Case. D. Gann, Jr., Little Rock, Ark.—p. 89.
148 Mastoid Infections; Report of Six Cases. A. J. Lorie, Kansas City, Mo.—p. 104.
149 Trachoma; Surgical Operations in Use—Results; Removal of Tarsal Cartilage and Palpebral Conjunctiva. D. W. White and P. C. White, Tulsa.—p. 108.

Southwestern Medicine, El Paso, Texas

April, I, No. 4

150 Differential Diagnosis and Treatment of Duodenal Ulcer. M. K. Wylder, Albuquerque, N. M.—p. 9.
151 Bacterin Therapy in Bronchial Asthma. A. D. Wilson, Prescott, Ariz.—p. 18.
152 Plea for More Intelligent Interest in Tuberculosis on Part of Medical Profession. F. H. McKeon, Fort Stanton, N. M.—p. 24.
153 Roentgen Ray Diagnosis of Focal Infections About Head. W. W. Watkins, Phoenix, Ariz.—p. 34.
154 Roentgenology; Method of Differential Diagnosis of Gastric Symptoms. C. Epler, Pueblo, Colo.—p. 39.
155 Cervical Suspension for Retrodisplacements and Prolapse of Uterus. H. White, El Paso.—p. 45.
156 Ancient Gunshot Wound of Forearm with Extensive Scar Formation and Contractions. W. L. Brown and C. P. Brown, El Paso.—p. 49.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

April, XXXV, No. 132

1 Diagnosis of Tuberculosis. L. J. Short.—p. 1.
2 Plague in Bristol in 1916. D. S. Davies.—p. 16.
3 Chronic Appendicitis in Its Relation to Dyspepsia; Report of Cases. H. Goodwyn.—p. 18.

British Journal of Tuberculosis, London

April, XI, No. 2

4 *Granules of Tubercle Bacillus. J. Sorley.—p. 51.
5 Morphologic Variations in Nuclei of Polymorphonuclear Neutrophil Leukocytes in Pulmonary Tuberculosis. J. B. McDougall.—p. 66.

4. Granules of Tubercle Bacillus.—Sorley's investigations have shown that it seems at present impossible to draw any very exact correspondence between the granular forms of the tubercle bacillus and the course of the disease. The presence of the granules implies simply that the bacillus is in a state of active reproduction, the presence of interpolar granules that the bacillus has attained a stage of greater or less maturity, and that, whether the bacilli be few or many, the severity of the disease and the prognosis are not necessarily affected thereby; for it is a matter of common clinical observation that a case in which the prognosis is good may have many bacilli in the sputum, whereas a case in which the prognosis is hopeless or grave may show few or even none at all.

British Medical Journal, London

April 28, I, No. 2939

6 Medicine and Sea Affair. A. May.—p. 533.
7 Medicine and Clinical Pathology. P. W. Bassett-Smith and H. D. Rolleston.—p. 533.
8 Surgery. W. G. Axford and G. L. Cheatle.—p. 535.
9 Hygiene. R. C. Munday.—p. 537.
10 Service Afloat. R. Hill and E. A. Penfold.—p. 539.
11 Hospital Ships. E. C. Lomas.—p. 542.
12 Account of Land Medical Transport Arrangements of Navy. J. Porter and A. V. Elder.—p. 545.

Edinburgh Medical Journal

May, XVIII, No. 5

13 Scope of Preventive Work in Connection with Medical Treatment of Infants and Young Children. J. C. Johnston.—p. 329.
14 Care of Children of School Ages. L. D. Cruickshank.—p. 326.
15 Mother Welfare in Pregnancy and Infant Health. J. W. Ballantyne.—p. 348.

16 Pediatrics and Child Welfare. A. D. Fordyce.—p. 361.
17 Some Practical Points Regarding Child Welfare Organization. J. Thomson.—p. 367.
18 Care of Mentally Defective Children. R. D. Clarkson.—p. 375.
19 *Surgical Tuberculosis and Child Welfare. A. P. Mitchell.—p. 383.

19. **Surgical Tuberculosis.**—Of 2,770 new cases treated in the surgical outpatient department of the Edinburgh Children's Hospital during 1913, 316 (fully 11 per cent.) children were affected by one or other form of surgical tuberculosis; 169 with tuberculosis of the neck glands; thirty-nine with Pott's disease of the spine; twenty-two with hip disease, while the remaining eighty-six had the disease in other joints and parts. These manifestations of tuberculous disease also constitute a very considerable percentage of all patients treated in the surgical wards of the hospital. Mitchell says it is not uncommon to find at any time that no less than 50 per cent. of the patients under treatment are cases of tuberculosis. One is struck with the numerous instances of tuberculosis of the glands in the upper part of the neck met with in the large number of children coming for examination at the surgical outpatient department of the hospital. These children, as a rule, show no clinical signs of tuberculosis elsewhere, and are, except for the local condition, apparently healthy. It is not at all rare for a single member of an otherwise healthy family to exhibit the disease. The high incidence of the disease in children from 2 to 3 years of age is striking. The influence of infectious diseases, notably measles, whooping cough and scarlet fever in apparently favoring the dissemination of the disease in the glands is also worthy of note. This indicates the great need for children during the convalescence from these infectious diseases being placed under the best hygienic conditions possible.

How do tubercle bacilli reach the glands in the upper part of the neck? Invasion takes place either through the faucial tonsils or the adenoid tissue behind the nose. In 38 per cent. of the children affected with tuberculosis of the glands in the upper part of the neck the disease has first involved the tonsils. The spinal column is the commonest seat of tuberculous bone disease in children. Like tuberculosis of the neck glands, it is rarely preceded by clinical manifestations of other tuberculous process, although it may be followed by them. The onset of the disease in a child who has been reduced by one of the infectious diseases, especially measles and whooping cough, is again a noteworthy feature. There has previously been a latent focus of tuberculosis elsewhere in the body. This has been frequently demonstrated at post-mortem examinations in the bronchial and mesenteric glands. Infection from these or from other tuberculous lymph nodes is the common point or origin of infection. Not more than 5 per cent. of cases of spinal caries are diagnosed before deformity has set in.

Surgical tuberculosis among children is sufficiently prevalent to constitute a real danger to the community, and to urge the immediate necessity for some comprehensive and systematic attempt at prevention and cure. Such questions as these relating to poverty, improper feeding and housing must be faced. As a practical measure, tuberculin injections would appear to be of value in increasing the powers of resistance to the disease. Open air schools are required for children who are definitely tuberculous, tuberculously disposed, or come from tuberculous houses. The establishment of convalescent homes in the country for the adequate treatment of children affected by active tuberculosis is a much felt want. The special care of children during convalescence from measles, whooping cough, and other acute specific diseases is greatly to be desired. For the welfare of any community, large or small, the provision of a pure milk supply is of the utmost importance—clean milk of good quality from healthy cows and protected from contamination. The powers at present vested in their local authorities are inadequate, and it seems to Mitchell to be their special duty to prevent this large and entirely preventable amount of tuberculosis among children. What is most wanted is a well informed public opinion which will demand new and more drastic powers for the authorities, and insist on these powers being exercised to their full extent.

Glasgow Medical Journal

April, LXXXVII, No. 4

20 Inversion of Uterus; Report of Six Cases. W. D. Macfarlane.—p. 193.
21 *Effects of Cinematograph Displays on Eyes of Children. W. B. I. Pollock.—p. 206.
22 Visual Defects; Refractive and Functional. J. A. Wilson.—p. 211.

21. **Effects of Cinematograph on Eyes of Children.**—Pollock is convinced that the increased prevalence of squint among children of from 4 to 8 years is directly attributable to the excitement and nervous strain they are under while watching the more exciting and hair breadth escapes seen in many cinematograph displays. An attendance of once a month is all that he would allow for schoolchildren; and he strenuously objects to the introduction of the cinematograph into school teaching, except at rare intervals.

Indian Journal of Medical Research, Calcutta

January, IV, No. 3

23 Opportunities for Medical Research in India. P. Lukis.—p. 381.
24 *Simplified Technic of Bass' Method of Cultivating Malarial Parasites in Vitro and Few Observations on Malarial Parasites Cultured by this Technic. R. Row.—p. 388.
25 *Flagellate Dysentery. G. C. Chatterjee.—p. 393.
26 Two Hemogregarines of Cold Blooded Vertebrates. H. E. Shortt.—p. 402.
27 Bunostomum Kashinathi and Ancylostomidae. C. Lane.—p. 414.
28 Are Echinostomum Malayanum and Artyfechinosomum Sufrartyfex Identical? C. Lane.—p. 440.
29 Dysentery in Jails of Eastern Bengal. J. Cunningham and H. H. King.—p. 442.
30 *Study of Entamebic Cysts. R. Knowles and A. F. Cole.—p. 498.

24. **Cultivation of Malarial Parasites.**—The apparatus used by Row consists of (1) an ordinary potato culture tube (¾ inch wide) with a well fitting rubber cork; (2) one small culture tube made in the laboratory; (3) one sucking pipet armed with a rubber nipple; (4) pyrogallic acid; (5) strong caustic soda solution; (6) human blood serum (indifferent), usually obtained from the blood serum available for Wassermann reaction; (7) 25 per cent. glucose solution, and (8) the infecting material, consisting of a few drops of blood taken from the patient at the bed side, shaken and defibrinated on the spot in the manner described below. The culture tube is made from glass tubing (0.8 cm. bore or thereabouts) by sealing off and gently blowing a small bulb at one end; this bulb is flattened so as to have a tube about 5 to 6 cm. long with a flat bottom one and a half to twice the bore of the tubing used. The object of this large flat bottom is to ensure a wide surface for the deposit of the corpuscles which settle down in a uniform thin layer during the time allowed for culture. The thin deposit of the corpuscles is of importance, inasmuch as it affords, during subsequent examination, no chance of missing the particular layer rich in developing plasmodia. Such culture tubes are also of great use on account of their small capacity; this is especially advantageous when only very small quantities of blood and serum are available. The essence of Row's technic is to obtain a glucose serum and infect it with the blood corpuscles containing the plasmodia and in a proportion sufficient to give a thin and uniform deposit of the corpuscles in the flat bottom culture tube.

25. **Flagellate Dysentery.**—Chatterjee has examined and identified the parasites in altogether seventy cases. The following were found: monocercomonas, three cases; prowazekia, two cases; macrostoma, eighteen cases; lamblia, fifteen cases, and pentatrichomonas, thirty-two cases.

30. **Study of Entamebic Cysts.**—On examining 365 invalided British soldiers from Mesopotomia, Knowles and Cole found 20 per cent. infected with *E. coli*, while 41 per cent. of cases of acute or convalescent dysentery showed *E. histolytica*. Throughout the examination of 528 stools for entamebas the authors constantly found difficulty in deciding between *E. coli* and *E. histolytica*. The differences between the ameboid forms of entamebic species are relative, subject to variation and not absolute. There is no differentiation between the species as regards size of cysts. The species show no distinctive difference as regards the contour, glycogen content, vacuolation and presence of chromidial rods in the cysts. The authors believe that these different species are all one

and the same organism. They suggest that the name *Entameba coli-communis* should replace the terms *E. coli, E. histolytica, E. minuta, E. tetragena,* etc. They have found that daily enemas of 1 in 80 of magnesium sulphate are of value as an adjuvant to emetin treatment.

Journal of Tropical Medicine and Hygiene, London

April 16, XX, No. 8

31 Case of Pellagra. A. Visyalingam.—p. 85.

Lancet, London

April 28, I, No. 4887

32 *War Surgery of Abdomen. C. Wallace.—p. 637.
33 *Abdominal Surgery at Advanced Operating Center. G. S. Hughes and W. A. Rees.—p. 642.
34 *Surgery of Amputation Stumps. G. M. Huggins.—p. 646.
35 Korsakow's Psychosis in Association with Malaria. H. Carlill.—p. 648.
36 Treatment of Diabetes Mellitus. R. T. Williamson.—p. 650.
37 Case with Severe Gastric Crises Treated by Aachen Methods. R. Hayes.—p. 652.

32. **War Surgery of Abdomen.**—From Wallace's article it is apparent that in surgery for the abdominally wounded, the mortality has been reduced at the front by some 10 per cent., and many fewer patients now die at the base. The total number of cases 1,288; total mortality, excluding moribund, 50 per cent.; total mortality, including moribund, 60 per cent.; considered with view to operation, 1,038; total operations, 965; total operative mortality, 54 per cent.; total hollow viscera mortality, 65 per cent.; stomach mortality, 53 per cent.; small intestine mortality, 66 per cent., and great intestine mortality, 59 per cent.

33. **Abdominal Surgery at Advanced Station.**—Out of the 640 cases of severe injuries to the abdomen, head or chest, received in six months at the advanced operating station where Hughes and Rees were detailed, 263 were wounds of the abdomen. When patients arrive within twenty-four hours of being wounded, so long as they are not moribund, they are all operated on. The following is an analysis of the time that elapsed between the receipt of the wound and the operation, and shows how important early operation is: 1. Patients operated on between one to six hours after wounding, forty-three; recovered, twenty-seven, or 62.8 per cent.; died, sixteen, or 37.2 per cent. In eight of the fatal cases the patients had such severe injuries that recovery was practically hopeless and they would not have survived to reach the operating room had they been brought in later. 2. Patients operated on between six to twelve hours after wounding, thirty-three; recovered, twelve, or 36.3 per cent.; died, twenty-one, or 63.7 per cent. 3. Patients operated on between twelve to sixteen hours after wounding, eighteen; recovered, three, or 16.6 per cent.; died, fifteen, or 83.4 per cent. 4. Patients operated on over twenty-four hours after being wounded, eleven; recovered, five, or 45.4 per cent.; died, six, or 54.6 per cent. Recoveries at forty-eight, thirty-six, thirty-three and a half, thirty-two and thirty hours, respectively. Deaths at sixty, thirty-six, thirty-two, thirty, twenty-nine and twenty-eight hours. In the series of 110 laparotomies one or other kidney was found to be wounded in fourteen. In every case this was in association with other injuries. In none of the series of 263 abdominal cases was operation necessary for the kidney condition alone, although damage to this organ was fairly frequently met with, as shown by pain and hematuria. The complication of the passage of the missile through the pleural cavity before entering the abdomen does not contraindicate the performance of laparotomy. It was present in eighteen laparotomies, in ten of which the patients recovered. The results of six months' work give the following figures: total number admitted with abdominal wounds, 263; recovered, 136, or 51 per cent.; died, 127, or 49 per cent.

34. **Surgery of Amputation Stumps.**—According to Huggins no secondary amputations should be performed in cases of guillotine amputations until all edema has disappeared and skin extension has been employed for six weeks. Guillotine amputation stumps above the middle of the leg or middle of the thigh should never be shortened until healed unless it is decided that the knee joint or hip must be sacrificed. When shortening has to be done the minimum amount of bone necessary for utilizing the joint above should always be borne in mind. A guillotine amputation may make a satisfactory stump in the leg and thigh, and almost always does in the forearm and arm without further reamputation. Bone in a stump does not necrose unless infected. Delay in shortening stumps reduces the risk of infection, because infection is not in the wound only, but in lymphatics leading from the wound. The amount of matting around the vessels leading to or from an amputation stump is very striking. Silk should never be used for ligatures in operations on stumps. Amputations should be done by skin flaps only, and no muscle should be utilized in the flap, the pad of fibrous tissue formed over the end of the bone from the organizing clot being all that is necessary. All nerves, and not merely the main nerves, must be shortened at the time of the amputation or reamputation. To prevent deformity, daily exercising the joints and the employment of splints and bandages are essential measures in preparing the stump for the artificial limb. A good Syme amputation leaves the patient with little disability, and amputations through the tarsus should never be done as a secondary operation.

Annales de Gynécologie et d'Obstétrique, Paris

March-April, LXXII, pp. 449-512

38 *Myoma and Pregnancy. A. Heimo (Geneva).—p. 449.
39 *The Functions of the Corpus Luteum. C. Mulon.—p. 458. Continuation. E. Novak (Baltimore).—p. 487.

38. **Myoma and Pregnancy.**—Heimo is convinced that the defective involution of the uterus in many cases is due to the presence of a myoma, possibly unsuspected. In one case he discovered a myomatous tumor on the right cornu of the uterus after delivery, but it had entirely disappeared by the ninth day. The hypertrophy, softening and atrophy of a small or medium sized myoma during pregnancy prevent its interfering with delivery. Operative intervention was required in only four myoma cases at the Geneva maternity in a recent eight year period. These cases are described in detail. The women were all in the thirties, and the disturbances from the myoma were so severe that the uterus was removed nothwithstanding the pregnancy of two, four or eight months' standing. In case of doubt as to the myoma, Beuttner rubs the uterus lightly, to induce it to contract. As it contracts, a myomatous tumor is thrown into greater relief, over it, but if the protuberance is caused merely by part of the fetus presenting, the protuberance disappears as the uterus contracts over it. In case of doubt as to an existing pregnancy, when operative intervention is decided, it should be by a laparotomy. If the uterus is to be removed, Heimo advocates the Kelly-Beuttner technic but enucleation may answer all the purposes in some cases. The vaginal route is liable to disagreeable surprises. Only about 20 per cent. of all the known myoma cases in his experiences were sterile. When a myoma is discovered in a woman who has been barren for ten or twenty years, we cannot ascribe the sterility always to the presence of the myoma. Hofmeier even declares that a myoma favors conception, not directly but because it postpones the menopause. Pinard says that uterine myomas develop as a consequence, not a cause of sterility. They are the punishment for a uterus that has not served its physiologic function. Heimo affirms, on the other hand, that we have unduly exaggerated the part played and the influence exerted by myomas on sterility and pregnancy.

39. **The Corpus Luteum.**—Mulon here continues her exhaustive study of the corpus luteum. The first part was summarized in these columns April 14, p. 1148. She here discusses the connection of the corpus luteum with menstruation and rut, analyzing much literature on the subject. . . . Novak's article appeared in THE JOURNAL, Oct. 28, 1916, p. 1285. It is here translated into French.

Bulletin de l'Académie de Médecine, Paris

April 17, LXXVII, No. 16, pp. 511-536

40 *Roentgenoscopic Diagnosis of Projectiles. (De l'emploi du compas Contremoulins réglé d'après une localisation radioscopique utilisant un rayon normal vertical.) Kirmisson.—p. 522. (Extraction des projectiles de guerre intrapulmonaires.) Bazy.—p. 527.

41 *Bone Grafting, without Opening the Joint, for Pseudarthrosis of the Neck of the Femur. P. Delbet.—p. 530.
42 To Increase the Birth Rate in France. G. Lepage.—p. 532.
43 Felted Hair Forming Cast of Stomach and Upper Duodenum of Girl of Thirteen. (Beau cas d'égagropile.) Dauriac.—p. 534.

40. **Extraction of Projectile in Lung.**—Bazy describes the method with which Petit de la Villéon removes a projectile in the lung, the whole procedure complete in a minute or two. He works in red light, guided by the Roentgen rays. After marking on the skin the point of the shadow of the projectile, he incises the skin two or three fingerbreadths to one side of the shadow, and then pushes into the depths a special forceps and seizes the projectile, guided by the shadows of the projectile and of the forceps as they approach each other. The lung is remarkably tolerant and the small accumulation of blood along the track of the forceps is speedily absorbed as is evidenced by roentgenoscopy, but there may be a little blood in the sputum for a month. Bazy warns that this technic is not applicable for projectiles in the hilus region, nor when an abscess has formed around the projectile or there is more than one foreign body.

41. **Bone Graft for Pseudarthrosis of Neck of Femur.**—Delbet here describes the ultimate outcome in fifteen adults in whom, without arthrotomy, he corrected crippling fracture or other injury of the neck of the femur, by ingrafting a rod of bone from 6.5 to 11 cm. long. The periosteum had been removed and the grafts retained their vitality. In one of his cases the pseudarthrosis was of six years' standing, and of six years and four months in another case. This latter patient served as a nurse through the campaign in Serbia. One patient was an extremely obese woman of 59, with multiple arthritis, and she died in about a year without having attempted to walk much. Ten other patients walk without difficulty. The others have had the grafting operation done quite recently, but the outcome is already very favorable. Delbet gives no details of his technic beyond the above. Its field is transcervical fracture, with decapitation, which entails pseudarthrosis. The results of treatment are better the more recent the injury. In one of his cases the neck seems to have been entirely restored, and in some others roentgenoscopy shows new bone production. One woman of 70 is walking with scarcely any limp a year after the grafting operation.

Le Nourrisson, Paris

V, No. 1, pp. 1-64

44 *Condensed Milk and Desiccated Milk in Infant Feeding. A. B. Marfan.—p. 1.
45 *Means to Collect Infants' Saliva. G. B. Allaria (Turin).—p. 13.
46 *Tuberculin and Radiotherapy in Treatment of Tuberculosis in Infants. A. Combe.—p. 17.
47 Organized Welfare Work for Infants in France. A. B. Marfan.—p. 39.

44. **Condensed and Desiccated Milk in Infant Feeding.**—Marfan insists that condensed milk should never be allowed as a regular diet, but that both condensed and desiccated milk are valuable in emergencies to supplement the regular diet for a short time or transiently during the heated term when good fresh milk cannot be procured. He thinks that condensed skimmed and sweetened milk keeps better than when made from whole milk, and that it is digested more readily by the infant, especially when it has digestive disturbances. When good fresh milk cannot be obtained, desiccated milk might be used for the regular food. Many physicians have reported good results with it, and Marfan's own trials have been encouraging with the milk powder made with half its fat. It is useful when the infant's condition calls for a concentrated food of small volume with little fluid, or when a food poor in fat is required, or food in which the albuminoid substances have been modified in a way to promote digestion. Desiccated milk might also be given a trial with habitual vomiting in infants that cannot get breast milk.

With the ordinary diarrhea of bottle-fed babies nothing is so good as buttermilk. Up to the age of 3 or 4 this is preferable. Above this age malted soups are better, made first with water alone and then with increasing amounts of milk. Sometimes the buttermilk and the soups do well together. But when buttermilk cannot be obtained, desiccated milk is the next choice. With choleriform diarrhea, desiccated skimmed milk has given him as good results as buttermilk. When an infant displays actual intolerance for cow's milk, condensed milk, desiccated milk or buttermilk may be indicated. By giving the milk powder at first in small amounts, rapidly increasing the amounts, an antianaphylaxis may be developed. When an infant is not growing properly it may be well to try different foods, changing from desiccated to condensed milk, buttermilk, etc., leading up to a return to fresh boiled milk. For infants with athrepsia, breast milk is the only salvation, but it usually comes too late. In conclusion Marfan adds that condensed and desiccated milk may be found useful at any age with a tendency to dropsy. They form a good concentrated food when fluids have to be restricted.

45. **To Collect an Infant's Saliva.**—In research on gastric digestion in infants Allaria has found it convenient to use a vial about 18 cm. long and 2 cm. in diameter with two glass tubes passing through the rubber stopper. One tube is connected with a faucet of running water, to secure an aspirating vacuum. The other tube is connected with a long soft rubber tube that has a perforated china knob in the end. This little knob is placed in the infant's mouth and as it sucks the knob the gentle aspiration from the water jet pump draws the saliva out into the bottle. The glass tube conveying the saliva is cut slanting below, to reduce capillary action. The tubes are cleansed by putting the stopper, with its tubes, in another test tube, and plunging the whole in a large vessel of water while the water jet pump is still kept going. This aspirates the water through the tubes and cleanses them thoroughly. The secretion of saliva can be stimulated by a drop of a 1:500 solution of saccharin. The foregoing technic is capable of application to other fluids, tears, sweat, etc.

46. **Tuberculin and Roentgen Treatment of Tuberculosis in Infants.**—This last work from the late Professor Combe brings down to the close of 1916 his experiences with systematic tuberculin treatment of tuberculosis in infants. If the dose of tuberculin injected subcutaneously is adapted to the parenteral digesting power of the babe, the production of antibodies proceeds regularly and there is a general immunizing reaction in addition to a focal cicatrization reaction. If the dosage is excessive, then anaphylaxis instead of immunization is induced. We have in the intradermal tuberculin test a reliable index as to what is going on under the influence of the tuberculin injections. Repeating this Mantoux intradermal tuberculin test at regular intervals shows whether the result is in the line of immunization or of anaphylaxis. He commences with a tenth of a milligram and increases the dose gradually, at three day intervals, up to a decigram or even 50 cg., testing the results with the intradermal injection of always a tenth of a milligram every two weeks. The progressive diminishing of the reaction to the Mantoux intradermal test, while the therapeutic dose is constantly being increased, shows that immunization is being realized and that the tuberculous process—usually a tracheobronchial glandular affection—is healing. If the Mantoux reaction, instead of diminishing, grows more pronounced, the infants are not being benefited, but the reverse, by their tuberculin treatment and it should be suspended at once.

The therapeutic injections are made intradermally. The subcutaneous route proved disastrous in his experience. He explains the reasons for this superiority of the intradermal technic. It allows the organism to be tuberculinized without risk when it would be absolutely refractory to subcutaneous injections with which the whole dose passes at once into the blood. He describes the technic for this "mantousation" as he calls it, and states that ten years of tuberculin treatment have convinced him of its reliability and efficacy with localized tuberculosis processes in infants and children. But if the tuberculosis is generalized, there is no chance for tuberculin treatment to be effectual, and he regards it as contraindicated if there are any certain signs of general tuberculosis. His experience with Roentgen treatment of tuberculosis in infants was still in a tentative stage, but the results were encouraging with tuberculous glands and tuberculous otitis, and the treatment is worthy of a trial, at least, with osteitis. One infant with tuberculous peritonitis and a

tuberculous process in the apex had the apical lesion exposed to the Roentgen rays three times at eight day intervals. Necropsy showed the apical lesion arrested and practically walled in, but the thymus was atrophied. If the Roentgen rays are responsible for this atrophy of the thymus, Roentgen treatment in this form is contraindicated for infants.

Paris Médical

April 14, VII, No. 15, pp. 293-308

48 *Sugar in the Cerebrospinal Fluid in Acute Meningitis. G. Laroche and J. Pignot.—p. 293.
49 War Fractures of the Elbow. (L'hémi-résection humérale par la voie latérale externe.) Monprofit and L. Courty.—p. 298.
50 Paralysis from Compression by Army Puttees. (Paralysie du nerf sciatique poplité externe due à la compression par la jambière.) A. Mouchet and B. J. Logre.—p. 303.
51 Treatment of Keloids. H. Gougerot.—p. 305.

48. Sugar in the Cerebrospinal Fluid with Acute Meningitis.—Laroche and Pignot have been making a systematic study of the sugar content of the cerebrospinal fluid in patients with various diseases, and they assert that the modifications in the sugar content may prove very instructive in certain cases. Just as the sugar content of the blood drops and disappears during acute infectious diseases, the sugar in the cerebrospinal fluid may fluctuate in the same way. The findings in the blood and fluid are generally parallel and are to be interpreted in the same way. They do not think that the fluctuation in the two is simultaneous, but they are inclined to accept a local and independent mechanism for each. Glucose seems to stand midway between the extremely diffusible substances, such as urea and sodium chlorid, and those which do not diffuse readily. The variations in the glucose content of the cerebrospinal fluid are evidently directly connected with the infection of the meninges, like the changes in the cells and the albumin. They urge that the test for sugar in the fluid should become a routine procedure along with the cell count and the test for albumin. Medical biology can never be too rich in symptoms. They tabulate the findings on repeated tests in cases of acute meningitis. In the meningococcus cases the sugar disappears more or less completely from the cerebrospinal fluid as the acute infection becomes installed; it reappears toward the fourth or fifth day in the favorable cases and disappears or becomes much reduced again as a relapse impends. On the other hand, the sugar content of the fluid does not fluctuate when disturbances are observed for which the serotherapy is solely responsible. It thus serves to differentiate these conditions when by the symptoms it is impossible to determine whether the disease is flaring up again or the trouble is a kind of serum sickness. A low sugar content in the cerebrospinal fluid, persisting low as the disease continues, is an unfavorable sign, as is shown by concrete examples.

All that is needed for the test is a test tube and Fehling's solution. Three drops of Fehling's solution are added to 2 c.c. of the centrifuged or filtered cerebrospinal fluid and brought to a boil over an alcohol flame. If the blue persists, the findings are negative, but if there is distinct and prompt precipitation, the reaction is positive. Sometimes the blue disappears without a precipitate forming; there is reduction of the copper but no precipitation. This corresponds to a notable reduction of the sugar content without its having entirely disappeared from the cerebrospinal fluid. This weakly positive reaction was never observed with a normal fluid. The findings with this test are qualitative and not quantitative, but they are exact enough for the purpose, as a rule.

Presse Médicale, Paris

April 5, XXV, No. 20, pp. 201-208

52 *Cases of Rat Bite Disease in France. (Les cas français de sodoku.) H. Roger.—p. 201.
53 Treatment of Fracture of Several Ribs. (Les enfoncements de la paroi thoracique.) J. Fiolle.—p. 202.
54 *Application of Carrel Method in Treatment of Acute Mastoiditis. G. Mahu.—p. 204.

52. Rat Bite Disease.—Roger remarks that in the European cases of sokodu that have been published the diagnosis was only retrospective until Fiévez last year recognized the affection in a woman of 66 in the war zone, and Roger's two cases since in soldiers. He cites instances of the disease in America, England, Germany and Italy. Rat bites are common in the trenches, he says, but evidently only a few rats are infected, as no symptoms were noted after the other bites. He has found in the *Union Médicale* of Oct. 25, 1884, a description of an intoxication following a rat bite which corresponds in every respect to the typical clinical picture of severe sokodu of the Japanese writers.

54. Carrel Treatment of Acute Mastoiditis.—Mahu relates that irrigating and draining according to Carrel's technic shortened the course of treatment by two-thirds in his experience. It is a kind of bridge between the old methods of treatment and closing the wound at once after the operation, thus interposing a useful and prudent period of watchful waiting before definitely suturing the wound. One or two teaspoonfuls of the Dakin fluid are used in the irrigation every two hours, under a pressure of 60 or 80. He changes the dressings every day, and each time examines a specimen of the discharge first dried and stained with phenolized thionin, 1:1,000. When the germs in the discharge are reduced to an average of one to the microscopic field, he thinks it is safe to suture.

Beiträge zur klinischen Chirurgie, Tübingen

May, 1916, C, No. 1, pp. 1-128. Last indexed May 26

55 Treatment of War Wounds. H. Fehling.—p. 1.
56 Asepsis vs. Antisepsis with Fresh Infection of Wounds. A. Hamm.—p. 12.
57 Open Treatment of War Wounds. G. Seefisch.—p. 19.
58 *Transfusion of Blood. G. Hotz.—p. 32.
59 Aneurysms from War Wounds. Gebele.—p. 35.
60 Surgery of Blood Vessels. H. F. O. Haberland.—p. 52.
61 Skull Wounds. (Schädelschüsse.) E. Erdelyi.—p. 57; F. Müller.—p. 73.
62 Wounds of the Chest. (Brustschüsse.) H. Kehl.—p. 98.
63 Immediate Primary Suture of the Wounded Lung under the Overpressure Procedure. F. Landois.—p. 111.

58. Transfusion of Blood.—Hotz relates that he utilized the donor's brachial artery, instead of the radial, for transfusion of blood in eight cases and found it much more convenient for several reasons. He never had any mishap in his twenty transfusion cases, even when the pressure in the donor's other arm dropped as low as 90 mm. mercury. If the donor collapses, his head is lowered and the legs wound with an elastic bandage. The acute consequences from the loss of blood soon pass away but there may be a little weakness for a few days. If one has time to prepare the donor, he says it is a good plan to have him drink copiously a few hours before the transfusion. During the transfusion he had better refrain from drinking, for fear of vomiting. In three of his cases there seemed to be thrombosis as the radial pulse could not be felt for a few days, but then it returned although a little weaker than on the other side. The size of the brachial artery simplifies the whole procedure, but this artery should never be used except by an expert. Otherwise it is best to draw the blood, citrate it, and infuse it like saline.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 14, XLVII, No. 15, pp. 449-480

64 *Operative Cure of Paraplegia of the Legs from Spinal Cord Tumor. H. Brunschweiler.—p. 449.
65 Plant Extracts Alleged to Contain Vitamins. (Beitrag zur Kenntnis der pharmakologischen Wirkung der Vitamine.) F. Uhlmann.—p. 464.

64. Spinal Cord Tumors.—A man of 35, a house painter, was brought to the hospital with total paralysis of both legs. Lead poisoning was supposed to be responsible for the paraplegia, as the man had had attacks of pain at times during the last seven years, which had been supposed to be lead colics. The Wassermann test was negative. The paralysis developed slowly, with sensory disturbances, and the retrospective diagnosis was a transverse lesion of the spinal cord. The unilateral pains, interpreted as lead colic, had been the only symptom of the tumor for seven years. By exclusion and neurologic tests, an extradural tumor was diagnosed, compressing the spinal cord at the seventh, eighth and ninth dorsal segments, and the sixth and fifth right roots. Roentgenoscopy revealed a tumor in the lung close to the spine

and on a level with the spinal tumor. The latter was enucleated, and proved to be an intravertebral, extradural sarcoma, and the patient has been recovering rapidly since. The tumor was evidently of an hour-glass shape and the part in the lung had to be left. The general condition is good now and the intrapulmonary tumor is small and smooth, so that there is reason to hope that it may retrogress under radiotherapy. The defensive skin reflexes aided materially in locating the intraspinal tumor. It was found exactly where the neurologic data had pointed to it.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 15, XXXVIII, No. 21, pp. 321-336

66 *Technic for Amputation of the Thigh for War Wounds. R. Mosti.—p. 321.
67 Appendicitis. J. Bruchi.—p. 323.

March 22, No. 23, pp. 353-368

68 *Suprarenal Treatment in Nephritis. P. Ercolani.—p. 353.

66. **Amputation of the Thigh.**—Mosti is inclined to regard "sausage" amputation, that is, cutting through the limb as one slices sausage, as the most promising technic in many emergency cases of war wounds. It is better to save the man's life, with a defective stump, than to let him die while working out a better looking stump. He has noticed that the posterior-internal group of muscles retract more powerfully than the anterior-external. To provide for this, the line of amputation drops down 4 or 5 cm. on the posterior internal side of the thigh, thus allowing for its greater retraction. With this technic, followed by extension, he has obtained excellent stumps and saved many otherwise doomed lives.

68. **Suprarenal Treatment in Nephritis.**—Ercolani called attention in 1910 to the advantages of suprarenal treatment in nephritis, and his experience since has constantly confirmed its efficacy in certain conditions. This is a logical means of aiding Nature when for any reason Nature is unable to produce adequate amounts of the suprarenal secretion. A number of other Italian writers have published similar favorable experiences with it, especially in scarlatinal nephritis. Licciardelli has reported that in a previous epidemic of scarlet fever at Taormina there were 136 cases with nephritis in 36, and 25 per cent. of the latter group succumbed to their nephritis. In a recent epidemic, 30 per cent. had nephritis but under the epinephrin treatment none died.

Anatomic conditions readily explain why any inflammatory condition in the kidneys is liable to be reflected in the suprarenals. As the suprarenals suffer, they supply less epinephrin. The kidneys are liable to suffer in diphtheria, the eruptive fevers, typhoid or pneumococcus infection, and it is in the diseases which touch the suprarenals most frequently, that is, in diphtheria, typhoid and smallpox, that there are so often symptoms showing disturbance in the myocardium and bulbar or neurotic changes, all of which are regarded nowadays as manifestations of suprarenal insufficiency. Whenever any acute infectious disease threatens to attack the kidneys and leave its evil imprint on them, this should be the signal for epinephrin treatment. It is important, therefore, to distinguish between the physiologic or functional type of albuminuria and the malignant type. Epinephrin treatment is called for in the latter, and the improvement under it confirms the diagnosis. In case of doubt, Ercolani does not hesitate to give the epinephrin. He expatiates on its marvelous action not only on the blood pressure but on the digestive organs, the muscular system and the kidneys, quoting Murri's conclusions that epinephrin seems to be able to neutralize certain poisons. Roux goes so far as to declare that the suprarenal secretion regulates the kidneys as digitalis regulates the heart. Be this as it may, Ercolani lauds the dual action of epinephrin as a detoxicating opotherapy with a supplementary vasoconstricting influence, both of which counteract the infection and ward off injury from the kidneys. He adds in conclusion that there is still much to be studied about the chemical and clinical action of epinephrin, and that any physician may find new fields of application for it.

Policlinico, Rome

April 15, XXIV, No. 16, pp. 505-536

69 Treatment of War Fracture of the Humerus. L. G. Gazzotti.—p. 505.
70 Gas Infection of War Wounds. P. Fiori.—p. 508.
71 Suggestions for Facilitating Care of the Sick and Wounded at the Front. C. Faralli. R. Alessandri, R. Bastianelli and T. Rossi Doria.—p. 510.
72 The Civilian Hospitals during the War. A. Campani.—p. 521.

March, Medical Section No. 3, pp. 97-144

73 Case of Cerebrospinal Sclerosis. A. Murri.—p. 97. To be continued.
74 War Wounds of Brain and Spinal Column. (Neurologia di guerra. II.) G. Mingazzini.—p. 121. To be continued.
75 *Is Hebra's Prurigo a Mycosis? G. Izar.—p. 139.

75. **Is Hebra's Prurigo a Mycosis?**—Izar is inclined to answer this question in the affirmative, as he relates that he found the *Sporothrix beurmannii* in the depths of the tissues affected, and this sporothrix proved pathogenic for rats and mice. The patient was a woman of 27, who had borne four children. The husband was robust and healthy and the woman also, except for an itching skin affection which seemed to be Hebra's prurigo. The sporothrix was encountered in the depths of the unbroken papulous lesions, and biologic tests were also positive with this sporothrix.

Riforma Medica, Naples

March 31, XXXIII, No. 13, pp. 337-364

76 *Influence of Vaccination on Course of Typhoid and Paratyphoid. P. Guizzetti.—p. 338. To be continued.
77 Peripheral Paralysis Following Chloroform Anesthesia or Chilling. C. Pastine.—p. 343.
78 Professional Reeducation of Maimed Soldiers. L. Ferrannini.—p. 347.

76. **Typhoid and Paratyphoid in the Vaccinated.**—Guizzetti relates that in the 892 cases of typhoid or paratyphoid in the hospital in his charge at Parma during a recent five month period, the mortality averaged 4.25 per cent., but it was only 3.33 per cent. in the vaccinated. The death was due to peritonitis from perforation in 44 per cent. of the fatal cases in the vaccinated, and only in 12.5 per cent. of the nonvaccinated. The perforation was always in the ileum, usually the lower third. He suggests that the mildness of the symptoms in the vaccinated encouraged them to pay less attention to their sickness; in one of the cases the man had eluded the vigilance of the nurses and gone to the latrine, the symptoms of perforation developing immediately afterward. The article is to be continued.

Brazil-Medico, Rio de Janeiro

March 31, XXXI, No. 13, pp. 105-112

79 Study of Endameba of Dysentery. H. de B. Aragão.—p. 105. To be continued.
80 Propagation to the Back of the Systolic Murmur with Mitral Incompetency. P. Valladares.—p. 106.
81 Heliotherapy in Brazil. A. Moncorvo, Jr.—p. 109. Continuation.

Semana Medica, Buenos Aires

XXIV, No. 8, pp. 219-246

82 *Teratoid Tumor of the Pharynx. B. S. Gonzales.—p. 219.
83 Climatotherapy of Tuberculosis in Argentina. A. Cetrangolo.—p. 242.
84 *Lymphocytosis in Syphilities. C. P. Mayer and A. C. Gourdy.—p. 243. Continuation.
85 Prophylaxis of Crime. V. Delfino.—p. 245.

No. 10, pp. 247-314

86 Treatment of Diphtheria on Principle of Biologic Immunity. (Nuevo tratamiento de la difteria con la haptinogenina.) J. Mendez, L. A. Garcia and N. S. Loizaga.—p. 275.
87 Curarization of Common Frog. (La curarizacion del Leptodactylus ocellatus (L.) Gir.) B. A. Houssay.—p. 285. Continuation.
88 Pessary for Genital Prolapse. A. D'Allesandro.—p. 300.
89 Principles of Plasmogenesis. (La sintesis de la organization.) A. Milice.—p. 303.
90 Living Matter and Dead Matter. A. de G. Rocasolano.—p. 306.

82. **Teratoid Tumor in the Pharynx.**—Gonzalez' patient was a man of 41. For three years he had noticed some difficulty in swallowing, and a small tumor was found in his throat. When removed it measured 5.5 by 7 cm. and weighed 78.5 gm. Access was by an incision, 15 cm. long, following the anterior margin of the sternomastoid. The nerves and vessels

were pushed aside and the tumor easily separated except at top and bottom. The lower pedicle tore in working to loosen the tumor and the upper pedicle had to be cut. The tumor seemed to be an encapsulated neuroma of the sympathetic ganglion. The operation was complete in twenty-two minutes and there was no pain, even in swallowing, by the next day, and the voice was not altered. A hematoma in the cavity was gradually absorbed. Ptosis and miosis were noticed for a time but finally subsided, and now, after a five years' interval, conditions seem to be entirely normal. Twenty-two illustrations accompany the article showing the microscopic and clinical findings.

84. **Lymphocytosis in Syphilitics.**—In this instalment of their serial article Mayer and Gourdy have reached cases 294 to 315. See Abstract 73 in THE JOURNAL, Feb. 24, 1917, p. 668.

Siglo Medico, Madrid

April 7, LXIV, No. 3304, pp. 225-244

91 Regional Pathology of Southern Spain. (Caracteristicas regionales de la patologia andaluza.) F. F. Martinez.—p. 238. Commenced in No. 3303, p. 216.

April 14, No. 3305, pp. 245-264

92 Intraspinal Treatment of Syphilis and Parasyphilis of the Nervous System. G. R. Lafora.—p. 246. Continuation.
93 *Typhus in Serbia and Prison Camps. B. W. Caldwell.—p. 252. Commenced in No. 3304, p. 228.
94 Present Status of Plastic Surgery. Goyanes.—p. 258. To be continued.

93. **Typhus in Serbia and Prisoners' Camps.**—This article is a literal translation into Spanish of Caldwell's article published in THE JOURNAL, Jan. 29, 1916, p. 326.

Russkiy Vrach

XVI, No. 3, pp. 49-72

95 War as the Struggle for Existence of Nations. G. M. Yusifoff.—p. 49. To be continued.
96 Experiences at Moscow Hospital with the First Hundred Thousand Wounded. V. N. Savvin.—p. 52. Concluded.
97 *Vaccines against Suppuration in Wounds. G. D. Bielonovsky.—p. 58.
98 *Severe Disturbances after Vaccination against Typhoid. V. R. Stefansky.—p. 59.
99 *Fumes of Iodin in Treatment of Tuberculosis of the Bladder. G. I. Baradulin.—p. 60.
100 Present Status of Technic for Amputations. E. T. Klopfer.—p. 62.
101 Changes in the Blood with Scurvy. V. V. Pezharskaya.—p. 65.

97. **Vaccination against Infection of Wounds.**—Bielonovsky relates that a favorable influence seemed to be unmistakable in the wounded treated with injections of Wright's vaccine to protect against streptococcus infection. A large supply of this vaccine had been donated to the Russian Red Cross by the British Red Cross. When this supply failed, a Petrograd vaccine was used and the results seemed to be equally good. He emphasizes the scientific and logical basis for this method of treatment, and urges that laboratories be equipped to produce this vaccine close to the firing line.

98. **Serious Disturbances after Vaccination against Typhoid.**—Stefansky states that, on an average, among every 400 or 500 men vaccinated against typhoid one presented considerable disturbance. The temperature ran up to 102 or 104, with vomiting, diarrhea, jaundice, transient albuminuria and syncope. The symptoms disappeared in a day or two without leaving a trace. Levy and Loeper have reported similar clinical experiences, and reproduced the disturbances in guinea-pigs after injection of a triple vaccine. Loeper ascribes the disturbances to a special affinity of the vaccine for the suprarenals, and combats it by injecting epinephrin to restore the blood pressure to normal. Stefansky remarks that the pathologic findings in the guinea-pigs' suprarenals are not convincing, as the suprarenals in these animals are damaged so easily by substances which do not injure human suprarenals. Loeper's statements as to the efficacy of epinephrin are based on too few cases to be decisive. Stefansky reports an especially serious case of disturbances after injection of antistreptococcus vaccine for an old chronic streptococcus affection. The first and second injections were borne without mishap, but a few hours after the third a serious condition developed suddenly, with cyanosis, almost imperceptible pulse, about 160, temperature 105 at times, and intense pains in the left flank, compelling morphin. This serious condition kept up for nearly three days and then subsided except for the pains, which persisted for several days. These excessive reactions in his experience always occurred in apparently entirely healthy persons. The intense neuralgic pains and vascular disturbances in his last case seem to point to bacterial anaphylaxis; there were no disturbances until after the injection had been repeated. He cites Kraus and Doerr's report that guinea-pigs injected subcutaneously with a small dose of typhoid, cholera or dysentery germs developed typical anaphylaxis if three days later they were injected with a larger amount of the same. Stefansky thinks it probable that the disturbances after vaccination in man can be explained in the same way as phenomena of anaphylaxis.

99. **Iodin Fumes in Treatment of Tuberculosis of the Bladder.**—Baradulin has applied systematically in five cases of tuberculous cystitis Farnarier's method of generating iodin fumes by heating iodoform. The fumes were conveyed into the bladder through a catheter, and four of the patients were materially improved. The fifth showed no benefit. There was a powerful reaction to the iodin fumes in all the cases that displayed benefit. Normand has reported improvement in all but four of twenty-four cases thus treated, and Farnarier in all but one of his fifteen cases. In short, Baradulin commends this iodin fumes method as the best means at our command to date for treatment of tuberculous cystitis and tuberculosis of the bladder in general. This iodin treatment may finally permit cystoscopy. (Farnarier's technic was described in THE JOURNAL, Aug. 10, 1912, p. 488.)

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 10, I, No. 10, pp. 689-784

102 Medical Instruction in Danish East Indies. (Het geneeskundig onderwijs in onzen oost. III.) G. Van Rijnberk.—p. 689.
103 *Uterine Angioma. D. B. Boks.—p. 694.
104 *Action of Digitalis on the Frog Heart. S. de Boer.—p. 701.
105 *Convalescent Serum in Treatment of Whooping Cough. J. L. A. Peutz.—p. 714.
106 Chylothorax in Course of Cancer of the Pleura. J. H. Wieringa.—p. 717.

March 17, No. 11, pp. 785-880

107 *Milk Hygiene. (De zorg voor het verkrijgen en beschikbaar stellen van modelmelk.) G. H. M. van Charante.—p. 787.
108 *Removal of Small Foreign Bodies from Anterior Chamber of the Eye. W. Koster.—p. 802.
109 *Cure of Polyneuritis in Fowls with Acid from Phaseolus Radiatus. D. J. H. Pol.—p. 806.
110 Adsorption of Substances Used in Olfactometric Tests. C. van Dam.—p. 812.
111 *Intravertebral, Extradural Tumors, Two Cases. J. H. Pameijer.—p. 816.

103. **Angioma of the Uterus.**—Boks remarks that myomas with portions suggesting an angioma have been occasionally encountered, but in a case here described, with illustrations, the tumor seemed to be a primary angioma. It was crowded with vessels of all sizes, embedded in connective tissue. He knows of only one analogous case on record (Boldt, 1893).

104. **Action of Digitalis on the Frog Heart.**—De Boer is assistant at the physiologic laboratory at the University of Amsterdam. He describes extensive research on the living frog heart, sixteen charts showing the spontaneous and experimentally induced modifications of the heart rhythm during the three phases of digitalis action.

105. **Serotherapy of Whooping Cough.**—Peutz relates that in a family of several children a child of 2 was convalescing from whooping cough when three other children seemed to be just developing the disease. He drew some blood from the convalescing child and injected the serum intramuscularly into the three other children. A mitigating or aborting influence seemed unmistakable, but, he adds, the number of cases is too small to exclude casual coincidence.

107. **Milk Hygiene.**—This is an address delivered by a Rotterdam physician before the Netherlands Infant Welfare Association. He says of the Netherlands that it is a land flowing with milk, there being over three million cows for a population of scarcely six million (*het land dat bij een*

bevolking van ruim 6 millioen menschen meer dan 3 millioen koeien telt). Rotterdam has a model dairy which gets 1,500 florins a year from a charity fund to pay the difference between its model milk and ordinary milk, when the family physician gives a certificate to that effect to a poor family. Even with this subsidy, the milk is sold at a loss, but the model dairy is regarded as an important educational institution as it attracts visitors from far and near. Even in peace times the bottle containing ¾ liter of this model milk sells for 17½ cents. (*Terwijl in vredestijd ¾ Literflesch voor 17½ cent wordt verkocht, kan de mingegoede deze verkrijgen voor* 12 *cent.*)

108. **Extraction of Small Foreign Body from Anterior Chamber.**—Koster discusses the preferable technic, emphasizing particularly what must not be done, both with metal and nonmagnetizable foreign bodies. For a very small splinter of metal, the entering wound already closed, he introduces a Graefe knife in a radial direction, at the extreme periphery, cutting thus around the edges. He then presses down the scleral lip of the incision with the hand magnet, and the scrap of metal soon comes into view and is drawn out. With other technic the scrap is liable to be held back by iris tissue. Even a strong magnet is not able to extricate it then. The mistake is often made that the incision is made too much in the cornea, or some other instrument is used instead of the proper Graefe knife. The smaller the metal particle, the harder it is to remove, as a rule.

If there is a piece of the same glass at hand, in case of a glass splinter in the eye, the glass can be tested to see if it casts a shadow under the Roentgen rays. He warns that no attempt must be made to extract nonmagnetizable foreign bodies through a straight incision, and that surgical pincers must not be used to seize them, for reasons which he enumerates. The opening by which the foreign body entered must be enlarged or, better yet, a new angular opening made to form a flap that can be lifted up with a sharp hook. The Graefe knife is the instrument to use, and it may be advisable to make a third incision to get a square flap, aiming to have the base of the flap on the side of the limbus. When the foreign body is thus exposed, he seizes it with fine anatomic pincers. A triangular or square flap injures the eye less than groping around through a straight incision. Even if extraction fails the first time, it is better to try again than to advise enucleation. In conclusion he describes a case of a piece of glass in the anterior chamber. An ophthalmologist made an incision with a lancet and tried to seize the glass with iris pincers, but there was some bleeding and the foreign body escaped out of sight, the blood and pigment concealing it. Koster advised waiting and Roentgen examination. Four days later he made an incision 8 mm. long through the cornea, on the side toward the nose, using a fine Graefe knife held perpendicularly, cutting from within outward. Then with curved tenotomy scissors, the cornea was cut perpendicularly to this for 6 mm. The flap was drawn back with a hook and the lens mass and the scrap of glass pressed up into the opening, and the glass was readily grasped with fine but strong anatomic pincers. There was no loss of vitreous humor. The nasal conjunctiva was loosened up and drawn over the wound in the cornea and sutured. A light compressing bandage was applied and the young man kept in bed. The eye healed favorably with 1 per cent. atropin. For six weeks a bandage was applied at night. Vision was then ⅚. A year later there was still some traumatic mydriasis but the visual field was good and there were no disturbances.

109. **Cure of Polyneuritis in Fowls.**—Pol thinks that he has isolated the active principle in the East Indian bean plant which supplies the substance the lack of which induces beriberi in man and polyneuritis in fowls. The physicians of Netherlands India have published several communications extolling the efficacy of the beans of this plant, katjanghidjoe or *Phaseolus radiatus*, in treatment of this deficiency disease in man and fowls. Pol at Utrecht has isolated from a decoction of these beans crystals of an acid which he calls *x* acid. It promptly cured four beriberi patients, and several fowls with experimental polyneuritis, but the quantities had to be surprisingly large. It is evident, he says, that the more this kind of substance is chemically purified the less efficient it becomes.

111. **Intravertebral Tumors.**—The successful removal of the large tumors in the two cases reported should encourage treatment in apparently desperate cases. The excised tumor was 7 cm. long in one case, but in neither of the cases were there symptoms on the part of the spinal roots. The pains between the shoulders in one case were evidently due to irritation of the vertebral periosteum. The Nonne reaction in the cerebrospinal fluid was positive, but there was no lymphocytosis and the Wassermann test was negative in both blood and fluid. The Pirquet test elicited a positive reaction, but no signs of tuberculosis otherwise were found. One tumor seemed to be a sarcoma, the other a mass of granulations but inoculation of guinea-pigs gave negative results.

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April 11, LX, No. 15, pp. 345-368

112 *Extensive Peripheral Gangrene in Syphilitic Man of Thirty-Seven. H. I. Schou.—p. 345.

113 Present Status of Means to Estimate Degree of Acidosis in Diabetes. (Et Par af de Maader hvorpaa Graden af Syreforgiftningen ved Sukkersyge kan søges afgjort.) K. A. Heiberg. —p. 357.

112. **Raynaud's Disease in a Syphilitic.**—Schou's patient is a clerk on a steamship. After scarlet fever at the age of 7, he had a transient gangrenous affection of the fingers of both hands, and the tip of one finger sloughed off. Except for acute gonorrhea at 25 he has been well although somewhat neurasthenic and inclined to chilliness and numbness. Two weeks before entering the hospital his nails looked blue and there was considerable pain in the extremities. Gangrene speedily developed and extended to the root of the thumb in one hand and to the knuckles in the other, while the toes on both feet were likewise but less severely affected. The rapid development and extent of the gangrene, the hematuria observed with polycythemia, slight hyperglykemia and the positive Wassermann reaction were the special features of the case. There was no hemoglobinuria but the hematuria persisted for nearly three weeks after the beginning of the attack. Schou has found records in accessible literature of thirty-eight cases of Raynaud's disease in syphilitics; there was manifest syphilitic arteritis in sixteen of them; the syphilis was dubious in eight others and certain in fourteen. In conclusion Schou urges investigation of the glands with an internal secretion in every case of Raynaud's disease, as this may throw light on the puzzling affection. Also he urges postmortem examination of every person known to have had Raynaud's disease.

Ugeskrift for Læger, Copenhagen

March 29, LXXIX, No. 13, pp. 475-514

114 *Physiologic Standardization of Digitalis. M. Krogh.—p. 475.

115 Present Status of Knowledge in regard to Foods and Dietaries. M. Hindhede.—p. 491. To be continued.

114. **Standardization of Digitalis.**—This work issues from the laboratory for experimental physiology of the University of Copenhagen. Krogh reviews the history of the application of digitalis in therapeutics and the attempts to standardize it effectually. A method of standardization is described which seems to be more dependable than any other. The tabulated details of the experiments and parallel tests apparently confirm the advantages of the method proposed. The test is made on the isolated heart of the frog, determining the lowest concentration which arrests the spontaneous rhythm. The research reported has shown that the hearts of the brown and the green frog, *Rana temporanea* and *Rana esculenta*, behave differently in response to this drug. The heart of the former absorbs a certain amount of the active principle. Consequently the *Rana esculenta*, the common frog, is the one to use, although the other frog heart may prove useful as a control. With the esculenta the preparation of digitalis or strophanthus can be estimated within 10 per cent. of strict accuracy.